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JUNE 1971

FATS AND OILS Situation

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U. S. DEPARTMENT OF AGRICULTURE

Table 1.--U.S. Fats and Oils Situation at a Glance

Item	Unit	Marketing year total or average 1968-69	Marketing year total or average 1969-70 Preliminary	1970 April	1970 May	1971 Feb.	1971 Mar.	1971 April	1971 May
SOYBEANS (Year beg. Sept.)									
U.S. average price received by farmers	$ bu.	2.43	2.35	2.48	2.52	2.92	2.91	2.80	2.85
U.S. support price	$ bu.	2.50	2.25	2.25	2.25	2.25	2.25	2.25	2.25
Price, No. 1 yellow, Illinois points	$ bu.	2.54	2.53	2.58	2.65	3.01	3.00	2.91	2.99
Price, No. 2 yellow, f.o.b., Gulf	$ bu.	2.72	2.74	2.78	2.85	3.22	3.19	3.09	3.18
Price, No. 2 yellow, f.o.b., Baltimore	$ bu.	2.66	2.76	2.79	2.85	3.24	3.22	3.11	3.22
Receipts at mills	Mil. bu.	609.7	742.6	50.9	44.3	51.0	51.1	43.0	49.2
Crushings	Mil. bu.	605.9	737.3	62.5	67.4	60.1	63.6	63.8	64.5
Oil yield per bushel crushed	Lb.	10.61	10.65	10.77	10.74	10.88	10.94	10.91	10.89
Meal yield per bushel crushed	Lb.	47.43	47.35	47.41	47.41	47.68	47.37	47.21	47.38
Stocks at mills, end of month	Mil. bu.	28.2	33.4	123.6	100.5	143.5	131.0	110.3	94.9
Exports	Mil. bu.	286.8	428.7	41.2	36.4	33.0	35.1	32.8	30.2
SOYBEAN OIL (Year beg. Oct.)									
Production	Mil. lb.	6,530.8	7,904.4	672.3	724.1	653.2	695.9	695.7	702.7
Domestic disappearance	Mil. lb.	5,756.3	6,327.6	516.2	545.8	497.7	558.1	502.9	N.A.
Exports	Mil. lb.	869.6	1,419.7	81.9	92.4	118.2	164.5	179.5	202.7
Stocks, end of month	Mil. lb.	415.4	543.4	632.3	715.8	787.8	756.0	767.8	N.A.
Price, crude, Decatur	¢ lb.	8.4	11.2	12.2	11.3	12.1	12.2	11.2	11.4
SOYBEAN MEAL (Year beg. Oct.)									
Production	Thou. ton	14,580.7	17,596.5	1,481.1	1,597.8	1,431.6	1,507.4	1,505.4	1,529.1
Domestic disappearance	Thou. ton	11,469.0	13,514.2	1,080.0	1,212.7	1,113.7	1,123.6	1,101.0	1,133.0
Exports	Thou. ton	3,044.3	4,035.4	385.9	304.9	310.2	413.0	383.8	342.3
Stocks at mills, end of month	Thou. ton	156.8	137.0	156.9	233.5	189.3	153.2	168.1	224.9
Price, 44% protein, bulk, Decatur	$ ton	74.10	78.40	74.60	71.20	77.50	77.00	74.25	78.25
Price, 49-50% protein, bulk, Decatur	$ ton	82.50	86.60	83.10	78.90	82.40	82.00	80.50	84.75
COTTONSEED (Year beg. Aug.)									
U.S. average price received by farmers	$ ton	50.50	41.10	---	---	58.90	58.20	---	---
U.S. support price, basis grade	$ ton	48.00	37.00	37.00	37.00	37.00	37.00	37.00	37.00
Receipts at mills	Thou. ton	4,461.8	3,846.3	12.9	36.0	51.8	19.2	15.5	10.2
Crushings	Thou. ton	4,363.3	3,925.2	308.0	220.3	439.0	410.3	310.5	235.6
Stocks at mills, end of month	Thou. ton	159.3	80.4	498.4	314.1	1,399.2	1,008.1	713.1	487.7
COTTONSEED OIL (Year beg. Aug.)									
Production	Mil. lb.	1,424.6	1,281.9	102.8	73.2	141.2	134.0	103.3	77.9
Domestic disappearance	Mil. lb.	1,016.9	1,068.9	104.9	38.5	81.4	71.2	66.5	N.A.
Exports	Mil. lb.	131.8	437.5	24.0	62.1	37.4	40.3	18.2	21.4
Stocks, end of month	Mil. lb.	439.7	213.9	325.1	297.7	224.6	246.9	265.4	N.A.
Price, crude, Valley	¢ lb.	11.6	12.0	14.0	14.3	16.0	15.9	15.2	15.0
COMMERCIAL LARD (Year beg. Oct.)									
Production	Mil. lb.	1,941.0	1,810.4	161.4	138.5	138.6	203.4	171.0	N.A.
Domestic disappearance	Mil. lb.	1,697.7	1,401.7	132.8	117.6	102.6	157.5	132.2	N.A.
Exports	Mil. lb.	222.9	349.4	12.9	29.9	40.5	44.4	39.3	30.9
Shipments to U.S. Territories	Mil. lb.	58.6	55.3	7.5	1.0	.4	6.4	.4	N.A.
Stocks, end of month	Mil. lb.	55.8	59.8	75.2	65.3	85.8	80.9	79.9	N.A.
Price, loose, tanks, Chicago	¢ lb.	8.4	11.6	11.8	11.6	10.0	11.8	11.3	10.8
CREAMERY BUTTER (Year beg. Oct.)									
Production	Mil. lb.	1,132.8	1,121.3	109.1	116.7	97.4	110.3	111.5	117.7
Domestic disappearance	Mil. lb.	1,139.5	1,099.4	85.5	84.0	83.0	85.0	88.9	84.8
Stocks, end of month, total	Mil. lb.	155.3	171.3	114.2	146.7	133.2	157.9	180.4	212.6
Stocks, end of month, CCC	Mil. lb.	121.4	145.1	75.6	107.2	102.3	121.9	158.2	179.4
Price, 92-score, Chicago	¢ lb.	67.5	68.9	69.8	69.8	69.8	69.8	67.8	67.8
FLAXSEED (Year beg. July)									
U.S. average price received by farmers	$ bu.	2.81	2.65	2.66	2.50	2.33	2.34	2.38	2.37
U.S. support price, farm basis	$ bu.	2.90	2.75	2.75	2.75	2.50	2.50	2.50	2.50
Price, No. 1, Minneapolis	$ bu.	3.09	2.90	2.97	2.97	2.62	2.63	2.71	2.72
Receipts at mills	Thou. bu.	14,338	15,945	650	1,260	1,043	1,500	1,488	1,365
Crushings	Thou. bu.	14,400	14,448	1,282	1,329	1,596	1,741	1,811	1,832
Exports	Thou. bu.	9,736	5,731	1	3	6	1/	174	122
Stocks at mills, end of month	Thou. bu.	1,245	2,743	3,305	3,235	3,648	3,407	3,085	2,619
LINSEED OIL (Year beg. July)									
Production	Mil. lb.	299.8	292.5	27.1	26.8	32.4	34.9	36.7	36.8
Domestic disappearance	Mil. lb.	275.0	251.7	23.5	23.8	19.2	19.7	19.1	N.A.
Exports	Mil. lb.	77.0	43.0	.2	6.5	.2	5.0	5.2	.1
Stocks, end of month	Mil. lb.	131.4	128.7	133.9	130.4	170.5	180.7	193.0	N.A.
Price, raw, Minneapolis	¢ lb.	12.1	11.9	11.0	12.2	9.5	9.0	8.8	8.8
INEDIBLE TALLOW & GREASE (Year beg. Oct.)									
Production	Mil. lb.	4,601.0	4,830.5	407.1	392.1	401.7	503.5	435.9	N.A.
Domestic disappearance	Mil. lb.	2,669.9	2,720.5	232.2	217.8	201.4	233.5	215.1	N.A.
Exports	Mil. lb.	2,007.3	2,049.8	179.7	201.9	274.8	239.4	236.1	180.5
Stocks, end of month	Mil. lb.	303.6	369.5	365.8	338.7	349.6	380.6	365.8	N.A.
Price, bleachable fancy, Chicago	¢ lb.	6.2	7.9	8.4	8.6	8.2	8.6	8.3	8.2
COCONUT OIL (Calendar year's 1969 and 1970)									
Production	Mil. lb.	386.4	N.A.	19.1	N.A.	N.A.	N.A.	N.A.	N.A.
Imports	Mil. lb.	428.6	594.7	17.5	51.7	41.7	52.9	54.9	47.5
Domestic disappearance	Mil. lb.	833.3	N.A.	52.2	N.A.	N.A.	N.A.	N.A.	N.A.
Stocks, end of month	Mil. lb.	60.4	100.8	122.1	122.9	180.9	182.5	169.5	N.A.
Price, crude, Pacific Coast	¢ lb.	13.6	16.3	16.7	16.4	14.5	13.8	13.2	13.1
PALM OIL (Calendar year's 1969 and 1970)									
Imports	Mil. lb.	159.6	140.9	8.4	.2	24.6	24.1	24.9	14.9
Domestic disappearance	Mil. lb.	153.1	133.0	9.1	5.3	15.4	15.5	14.1	N.A.
Stocks, end of month	Mil. lb.	35.0	42.9	23.0	17.8	49.5	58.0	68.7	N.A.
Price, Congo, tanks, New York	¢ lb.	11.2	13.2	13.2	14.0	13.5	13.5	13.5	12.5
PEANUTS (Year beg. Aug.)									
U.S. average price received by farmers	¢ lb.	11.9	12.3	---	---	12.0	---	---	---
U.S. support price - Farmers' stock basis	¢ lb.	12.01	12.38	12.38	12.38	12.75	12.75	12.75	12.75
Millings, all types, Farmers' stock basis	Mil. lb.	2,275.0	2,267.9	153.7	119.9	256.2	245.5	232.7	185.7
Production of shelled edibles	Mil. lb.	1,252.0	1,284.8	77.0	59.2	122.9	128.9	109.9	85.6
Total edible uses - shelled basis	Mil. lb.	1,031.7	1,060.6	86.7	81.7	84.0	94.6	87.6	79.7
Crushings - shelled basis	Mil. lb.	491.4	437.1	54.9	42.0	58.2	66.7	66.2	67.0
Commercial stocks, end of month - FS	Mil. lb.	356.7	352.7	861.4	653.9	1,644.8	1,381.8	1,064.1	853.8
CCC stocks, end of month - FS	Mil. lb.	---	---	---	---	219.3	67.9	6.8	---
PEANUT OIL (Year beg. Aug.)									
Production	Mil. lb.	205.2	182.0	22.6	17.5	24.6	28.4	28.4	28.1
Domestic disappearance	Mil. lb.	180.3	154.5	13.3	10.6	13.0	21.1	16.6	N.A.
Exports	Mil. lb.	25.6	35.8	.3	2/	2.4	5.7	2.8	2.1
Stocks, end of month	Mil. lb.	33.7	25.3	28.6	35.4	27.4	28.9	37.9	N.A.
Price, crude, Southeast mills	¢ lb.	13.2	14.9	15.5	16.1	18.2	17.1	16.6	17.4

1/ Less than 500 bushels. 2/ Less than 50,000 pounds.

THE FATS AND OILS SITUATION

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Approved by
The Outlook and Situation Board
and Summary released
June 23, 1971

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The *Fats and Oils Situation* is published in January, April, June, September, and November.

SUMMARY

Soybeans continue to disappear at a record pace so far this marketing year although the crushing and export rates have recently slackened. Usage for the entire year will total about 1¼ billion bushels, 3% above the 1969/70 record. This will leave a carryover of around 100 million bushels next September 1, down from the 230 million bushels last September.

Soybean crushings during September-May 1970/71 totaled 574 million bushels, 25 million more than the previous year. Domestic use of soybean oil is running about the same as last year while exports are ahead nearly 50%. Four percent more soybean meal has been used domestically and 8% more exported.

Crushings this summer probably will be just short of last year's June-August level of 189 million bushels. This would bring the total 1970/71 crush to around 760 million bushels, about 3% above the previous season. Processing margins have declined from last fall's high when the industry was operating at a high percentage of capacity.

Soybean exports for 1970/71 may approximate the 429-million-bushel level of 1969/70. Soybeans inspected for export from last September through June 18 totaled about 350 million bushels compared with 355 million a year ago. The slight decline occurred in June. Exports during the summer could vary somewhat from year-ago levels depending on how exporters and foreign buyers appraise the threatened dock strike in September or later in the fall. In the past, foreign buyers have tended to stockpile soybeans in anticipation of such strikes. Relatively small spreads between prices of old and new crop soybeans provide foreign buyers little incentive to delay purchases this year. Last year CCC sold a large quantity of soybeans for delivery during the summer and this stimulated exports.

Soybean prices (No. 1 yellow, Chicago) generally advanced from a monthly average of $2.81 per bushel last September to $3.20 for June. They averaged $3.00 during this period, 44 cents above 1969/70. Prices this summer will stay well above year-ago levels as soybean demand remains strong and supplies decline.

New crop developments will influence soybean prices this summer since soybean demands next year will have to be met almost entirely from 1971 production. Last September, CCC marketed 70 million bushels of soybeans, but no such reserves are available for this coming September.

SITUATION AND OUTLOOK

Soybeans

Farm Prices Move Up

Smaller soybean supplies in 1970/71 and continuing strong demand for soybean products have boosted farm prices a fifth above the previous marketing year. Prices advanced from $2.66 per bushel last September to near $3 this June. Soybean prices usually peak seasonally in the spring. Prices will continue above 1970 levels this summer. They will be influenced by the prospects for the 1971 soybean crop and also a possible dock strike next September or later—which could lead to heavy purchases for export late in the summer.

Through May, farmers placed 146 million bushels of 1970-crop soybeans under price support, down from the 180 million bushels a year earlier. They have redeemed 70 million. With market prices continuing favorable, the remainder still under loan likely will be redeemed this summer. Reseal loans will not be available for 1970-crop soybeans. As of May 31, reseal from 1966-69 crops totaled about 26 million bushels. These loans are not being extended this year and the soybeans likely will move to market this summer.

Carryover to Fall

Use will exceed output this season resulting in another sharp drawdown in stocks—possibly to around 100 million bushels. These stocks likely will be in commercial hands, in contrast to last year when CCC had large holdings.

Soybean supplies are about 6% below 1969/70 for the first decline since 1963. Sustained demand is carrying utilization to a new high, some 3% above the 1969/70 record. This is a modest increase in comparison with the 1969/70 record gain of nearly 30%.

Soybean supply and use[1]

Item	1967	1968	1969	1970[2]
	Million bushels	*Million bushels*	*Million bushels*	*Million bushels*
Beg. stocks, Sept. 1	90	166	324	230
Production	976	1,103	1,126	1,136
Total supply	1,066	1,269	1,451	1,366
Crushings	576	606	737	760
Exports	267	287	429	425
Seed, feed, etc. ...	57	52	55	71
Total use	900	945	1,221	1,256
End. stocks, Aug. 31	166	324	230	110

[1]Year beginning September. [2]Use and ending stocks are estimates.

Crush Headed for New Record

Soybean crushings during September-May totaled nearly 5% above a year ago. Each month's crush was above the year before until May when the rate slowed. The average thus far is running a record 64 million bushels per month, compared with 61 million last year. Crushings for the entire season could exceed last year's record by around 20 to 25 million bushels.

Soybean crushings

Month	1969/70		1970/71	
	Monthly	Cumulative	Monthly	Cumulative
	Million bushels	*Million bushels*	*Million bushels*	*Million bushels*
September	47.5	47.5	53.3	53.3
October	61.8	109.4	66.8	120.1
November	62.0	171.4	65.9	186.0
December	63.1	234.5	68.1	254.1
January	62.9	297.4	67.7	321.8
February	58.8	356.3	60.1	381.9
March	62.9	419.1	63.6	445.5
April	62.5	481.6	63.8	509.3
May	67.4	549.0	64.5	573.8
June	63.7	612.7		
July	62.7	675.4		
August	62.0	737.3		
Year	737.3		[1] 760	

[1] Estimate.

Crushers' Margin Down

The soybean spot crushing margin declined from near 50 cents per bushel last September to about 10 cents in May. Margins averaged 26 cents for the entire period—about half that of a year ago. The decline reflects limited supplies and higher prices as well as a sharp increase in crushing capacity. While margins this year have fallen, the average is still well above those of most other recent years. Processing margins this summer probably will remain well below the 37 cent level of June-August 1970.

Spot soybean processing margins[1]

Month	Average 1960/68	1968/69	1969/70	1970/71
	Cents per bushel			
September	28	36	37	47
October	20	29	61	45
November	16	12	45	36
December	11	1	56	38
January	10	-1	59	25
February	10	4	77	16
March	8	9	53	15
April	5	4	50	6
May	4	5	25	10
June	7	7	24	
July	11	6	39	
August	17	22	48	
Annual average ..	12	12	48	

[1] Spot price spreads calculated from simple average monthly cash prices of soybeans, oil and meal at Decatur.

The last time processing margins were extremely unfavorable for an extended period of time was in 1963/64 (5 cents per bushel) and 1964/65 (7 cents per bushel). Some months during these 2 seasons the spot margins were negative. Spot margins were highly favorable from the fall of 1969 through all of 1970. Now processing capacity has expanded sharply both here and abroad and processing margins have dropped. Aiding in this decline is the elimination of the soybean surplus, so soybean prices can more readily move in the direction of product values.

Soybean processing capacity and margins

Year	Processing capacity			Average spot processing margin
	Estimated total	Utilized (crush)	% of capacity utilized	
	Mil. bu.	*Mil. bu.*	*Pct.*	*Cents*
1968/69				
Oct.-Dec.	180	162	90	14
Jan.-Mar.	185	149	81	4
April-June	190	156	82	5
July-Sept.	195	148	76	22
Year	750	615	82	11
1969/70				
Oct.-Dec.	200	187	94	54
Jan.-Mar.	205	185	90	63
April-June	210	194	92	33
July-Sept.	215	178	83	45
Year	800	743	93	49
1970/71				
Oct.-Dec.	220	201	91	40
Jan.-Mar.	220	191	87	19
April-June[1]	225	190	84	8
July-Sept.	225	173	77	
Year	890	755	85	

[1] April-June and forward data are estimates.

Annual processing capacity has expanded from 750 million bushels in 1968/69 to nearly 900 million bushels this year. On a quarterly basis, it has risen from 180 million bushels in the fall of 1968 to 225 million currently. The processing industry is now operating near the long-run average of about 80% utilization rate compared with 93% in 1969/70, one of industry's best years.

Export Inspections Fall Behind 1970 Pace

Soybeans inspected for export from last September through June 18 totaled about 350 million bushels compared with 355 million during the same period a year ago. The slight decline occurred in June. Exports this summer could vary somewhat from year ago levels, depending on how exporters and foreign buyers appraise the threatened dock strike at East Coast and Gulf ports in September or later in the fall. In the past, foreign buyers have tended to stockpile soybeans ahead of such strikes and this could increase our soybean exports during late July and August. Foreign stockpiling of 2 to 4 weeks' requirements could amount to 20 to 40 million bushels. Furthermore, this year there appears to be little price incentive for foreign buyers to delay purchases as the spread between old and new crop soybean prices is relatively narrow.

Soybean exports[1]

Month	1969/70		1970/71	
	Monthly	Cumulative	Monthly	Cumulative
	Million bushels	*Million bushels*	*Million bushels*	*Million bushels*
September	13.3	13.3	29.6	29.6
October	52.5	65.8	44.0	73.6
November	53.7	119.5	45.3	118.9
December	39.9	159.4	46.9	165.8
January	28.7	188.1	35.1	200.9
February	31.6	219.7	33.0	233.9
March	39.2	258.9	35.1	269.0
April	41.2	300.1	32.8	301.8
May	36.4	336.5		
June	37.9	374.4		
July	25.2	399.6		
August	29.0	428.7		
Year	428.7		[2] 425	

[1] Census data. [2] Estimate.

SOYBEAN OIL

Domestic Use Steady; Exports Up 50%

Soybean oil supplies for the year ending next September 30 are placed at 8.7 billion pounds, 4½% above 1969/70.

Domestic use of soybean oil is estimated around 6.4 billion pounds. This would be up fractionally with all of the increase occurring in May-September. A 10% gain was registered during 1969/70. Increased domestic use of lard and peanut oil is limiting the soybean oil offtake this season. Domestic disappearance during October-April was 3.7 billion pounds, the same as last year's record pace. For the remainder of the season domestic use may slightly exceed the 2.6 billion pounds of May-September 1970.

Soybean oil

Year	Production	Domestic use[1]	Exports[1]	Stocks[2]
	Million pounds	*Million pounds*	*Million pounds*	*Million pounds*
1969/70				
Oct.-Dec.	1,982	1,593	278	517
Jan.-Mar.	1,962	1,616	295	561
April-June	2,077	1,593	385	651
July-Sept.	1,884	1,525	462	543
Year	7,904	6,328	1,419	543
1970/71				
Oct.-Dec.	2,163	1,578	361	756
Jan.-Mar.	2,074	1,647	417	756
April-June[3]	2,095	1,625		
July-Sept.	1,818	1,550		
Year	8,150	6,400	1,600	650

[1] Excludes shipments to U.S. Territories which totaled 29 million pounds in 1969/70 and about 50 million pounds for 1970/71. [2] End of period. [3] April-June and forward data are estimates.

Soybean oil exports for the current year are estimated at a record 1.6 billion pounds compared with 1.4 billion in 1969/70. World demand for soybean oil continues to increase and U.S. oil has been competitively priced in relation to sunflowerseed and peanut oils and generally with soybean oil produced abroad. Exports moving under P.L. 480 programs may slightly exceed the 0.8 billion pounds of 1969/70. But a sharp increase is likely for barter and commercial sales—well above last year's 0.6 billion pounds.

Soybean oil exports in October-April 1970/71 totaled 957 million pounds, nearly 50% above the year before. The bulk of the increase was to Eastern Europe and South America.

U.S. soybean oil exports

Destination	October-April		
	1968/69	1969/70	1970/71
	Million pounds	*Million pounds*	*Million pounds*
Asia & Oceania			
India	178	87	78
Pakistan	90	202	175
Israel	13	18	24
Africa	59	103	126
Eastern Europe	2	5	207
Western Europe	2	11	23
South America	41	63	128
Total U.S. exports[1]	480	655	957

[1] Includes exports to other destinations not shown but excludes shipments to U.S. Territories.

Soybean oil prices (crude, Decatur) declined from 14 cents per pound in October to 11 cents in April, then strengthened and in late June were near 14 cents once again. The October-June average was about 1½ cents above the year-earlier level. Prices are expected to continue strong this summer, averaging above last year's 11½ cent level.

Stocks of soybean oil (crude and refined) rose from 543 million pounds last October to 788 million on March 1 and have held near this level since then. Stocks on May 1 were 768 million pounds compared with 632 million the same date in 1970.

The soybean oil carryover next October 1 may total around 650 million pounds, about 100 million above the year before. This is a downward revision from earlier carryover estimates, reflecting a slight reduction in the soybean crush and an increase in oil exports.

SOYBEAN MEAL

Domestic Use and Exports Gain

Soybean meal supplies for the year ending next September 30 total 18 million tons, just slightly above 1969/70. Domestic use and exports are expected to show modest gains.

Soybean meal

Year	Production	Domestic use[1]	Exports[1]
	Thou. tons	*Thou. tons*	*Thou. tons*
1969/70			
Oct.-Dec.	4,415	3,357	1,069
Jan.-March	4,353	3,341	972
April-June	4,590	3,496	1,015
July-Sept.	4,238	3,320	979
Total	17,596	13,514	4,035
1970/71			
Oct.-Dec.	4,731	3,654	1,068
Jan.-March	4,544	3,346	1,162
April-June[2]	4,590	3,400	1,100
July-Sept.	3,995	3,200	
Total	17,860	13,600	4,200

[1] Excludes shipments to U.S. Territories. [2] April-June and forward data are estimates.

Soybean meal feeding through April ran 4% above last year, with most of the gain occurring last fall. May-September feed use probably will not quite match last year's level. Slowdowns in livestock and poultry production are becoming more evident because of low feed-price ratios. Hogs and broilers are the leading consumers of soybean meal.

Exports of soybean meal in 1970/71 may slightly exceed the previous year's 4 million tons. The 1969/70 season's total increase was about 1 million tons. Larger world supplies of competing commodities—chiefly fish, rapeseed, and linseed meals—could limit soybean meal gains, especially this summer. Exports during October-April were 8% more than in 1969/70. Western Europe accounts for about three-fourths of U.S. soybean meal exports.

U.S. soybean meal exports

Destination	October-April		
	1968/69	1969/70	1970/71
	Thou. tons	*Thou. tons*	*Thou. tons*
Western Europe	1,387	1,821	1,937
Eastern Europe	165	319	318
Asia & Oceania	65	109	108
Total U.S. exports[1]	1,779	2,427	2,614

[1] Includes exports to other destinations not shown but excludes shipments to U.S. Territories.

Monthly soybean meal prices (44% protein, bulk, Decatur) have remained fairly steady so far this marketing year, averaging $79 per ton during October-June, about $2 above last season. Prices this summer probably will continue strong as supplies become less plentiful. During July-September 1970 soybean meal prices averaged $83 per ton.

COTTONSEED

Crush Near Last Year; Oil Use Off

Oil millers purchased 3.9 million tons of cottonseed this season, representing 95% of the 1970 crop—about the same volume and ratio as the previous year. This likely will be the crush for the year ending July 31. The seed has been processed at a slower rate this year than last, extending the milling season.

Cottonseed oil supplies ran just under 1.5 billion pounds, 0.2 billion below 1969/70. Sharply reduced carryover stocks last fall primarily accounted for this smaller supply.

Domestic disappearance this season is running 17% below 1969/70—with usage down in shortening, margarine, and salad and cooking oils. Smaller supplies and higher prices are responsible for reduced consumption this year.

Cottonseed oil exports are also trailing last year's rate—down 32% through April. In 1969/70 CCC sold large quantities into export markets which increased the volume. Reduced shipments this season reflect smaller purchases by the United Kingdom, Iran, Mexico, Pakistan, and the Netherlands.

The carryover of cottonseed oil (crude and refined) next August 1 may be near the 214 million pounds of 1970. The entire carryover will be held in commercial hands. Stocks on May 1 totaled 265 million pounds, about 60 million below May 1970.

Cottonseed oil

Period	Production	
	1969/70	1970/71
	Million pounds	*Million pounds*
Aug.-April	1,121	1,027
May-July	161	223
Total	1,282	[1] 1,250
	Domestic use	
Aug.-April	891	739
May-July	178	211
Total	1,069	[1] 950
	Exports[2]	
Aug.-April	346	234
May-July	92	66
Total	438	[1] 300

[1] Estimate. [2] Includes shipments to U.S. Territories.

Cottonseed oil prices (crude, Valley) for the 1970/71 marketing year will probably average about 2 cents above the 12 cent level of 1969/70. Prices rose from 12½ cents last September to nearly 16 cents in March and recently have been around 15 cents. Smaller supplies and the good demand for edible vegetable oils are major factors behind the strong price pattern this season.

LARD

Production Jumps

Lard output is up 16% from a year ago. A sharp increase in hog slaughter accounts for the gain, as lard yield per hog is still declining. Output is expected to continue above year-ago levels but the margin will narrow by late summer as slaughter begins tapering off.

Domestic use of lard during October-April was up 17% stimulated by greater lard supplies at favorable prices relative to competitive edible oils. Increased use in shortening and margarine primarily accounted for the gain as direct use was virtually unchanged.

Commercial Lard

Period	Production	
	1969/70	1970/71
	Million pounds	*Million pounds*
Oct.-April	1,077	1,250
May-Sept.	732	810
Total	1,810	[1] 2,050
	Domestic use	
Oct.-April	826	965
May-Sept.	576	660
Total	1,402	[1] 1,625
	Exports[2]	
Oct.-April	231	263
May-Sept.	174	167
Total	405	[1] 430

[1] Estimate. [2] Includes shipments to U.S. Territories.

Lard exports and shipments for the current season probably will slightly exceed last year's volume. Exports so far this year are up 14%. Larger exports to the U.K.—the major market—account for the gain. Since January 1969, lard to that country has been moving under the export payment program to keep U.S. lard competitive in the U.K. market with lard from the Continent. The final volume of lard exports will be influenced by such factors as competition from foreign lard supplies, activity under the U.S. export payment program, and the quantity of lard required by domestic users.

Lard prices (tanks, loose, Chicago) during October-June averaged 11 cents per pound, about a cent below a year ago. Prices over the rest of the marketing year are expected to remain firm, reflecting the slowdown in lard production and continued strong demand for food fats and oils.

Table 2.--Food fats and oils: Supply, disposition, and per capita disappearance, 1961-70

Item	Year beginning October									
	1961	1962	1963	1964	1965	1966	1967	1968	1969 1/	1970 2/
	-- Million pounds --									
Stocks, October 1										
Butter	238	3/419	3/450	3/188	161	68	212	197	155	171
Lard	100	73	81	68	62	64	107	94	56	60
Tallow, edible	25	21	34	25	22	40	70	39	26	37
Corn oil	33	50	63	62	35	55	47	41	71	60
Cottonseed oil	170	296	488	433	236	202	207	99	377	121
Soybean oil	677	618	920	578	297	462	596	540	415	543
Palm oil	27	16	4/37	4/22	10	17	13	28	28	20
Peanut oil	9	11	30	8	18	34	31	14	17	12
Safflower oil	27	46	80	24	35	50	60	76	61	29
Sub-total	1,307	1,550	2,183	1,407	876	992	1,343	1,128	1,206	1,054
Finished products 5/	281	473	347	232	197	224	256	231	217	236
Total food fats and oils	1,588	2,023	2,530	1,640	1,073	1,216	1,599	1,359	1,423	1,290
Imports										
Butter	2	2	2	1	4	2	2	2	2	2
Tallow, edible	6/	6/	1	1	1	1	2	6/	6/	6/
Olive oil	57	37	66	47	47	55	60	58	63	65
Corn oil	26	15	3	---	10	2	9	8	3	1
Cottonseed oil	---	---	---	---	---	17	13	6/	6/	---
Palm oil	43	27	8	5	41	89	72	161	122	225
Peanut oil	5	.1	---	---	6/	---	6/	6/	6/	6/
Sesame oil	1	1	1	1	2	1	1	2	2	2
Total	134	83	81	55	104	167	159	231	191	295
Production										
Butter	1,596	1,491	1,454	1,412	1,120	1,235	1,185	1,141	1,127	1,175
Lard	2,468	2,495	2,475	2,205	1,900	2,066	2,067	1,969	1,833	2,075
Tallow, edible	439	475	572	528	551	597	540	520	566	550
Oleo oil & stearine 7/	5	4	6	7	12	14	6	6	11	6
Corn oil	361	379	413	435	449	446	442	467	474	475
Cottonseed oil	1,950	1,927	1,936	1,999	1,830	1,223	1,020	1,450	1,251	1,275
Soybean oil	4,790	5,091	4,822	5,146	5,800	6,076	6,032	6,531	7,904	8,150
Peanut oil	67	91	114	144	163	175	198	199	180	235
Safflower oil (estimate)	51	152	104	111	138	170	139	100	75	50
Sub-total	11,727	12,106	11,896	11,987	11,963	12,001	11,629	12,382	13,421	13,991
Oilseeds (oil equivalent of exports)	1,688	1,989	2,115	2,361	2,940	3,050	3,078	3,210	4,961	4,691
Total Supply	15,137	16,201	16,622	16,043	16,080	16,435	16,465	17,182	19,996	20,267
Exports and shipments										
Butter	8/19	8/131	8/319	150	24	7	31	37	8	5
Lard	508	571	706	431	218	247	246	281	405	430
Tallow, edible	5	5	4	5	3	5	6	8	11	10
Oleo oil & stearine	5	4	6	7	12	14	6	6	11	6
Corn oil	---	---	---	---	---	18	25	29	34	40
Cottonseed oil	8/471	8/389	8/584	641	275	78	51	141	453	275
Soybean oil	8/1,308	8/1,165	8/1,106	1,357	948	1,105	993	899	1,449	1,650
Peanut oil	6/	4	67	75	14	6	4	28	34	30
Processed food oils 9/	77	94	111	79	64	76	59	61	63	60
Sub-total	2,394	2,362	2,903	2,744	1,558	1,557	1,427	1,490	2,468	2,506
Oilseeds (oil equivalent)										
Cottonseed	3	3	3	3	3	2	1	1	9	16
Soybeans	1,685	1,984	2,103	2,265	2,764	2,930	2,972	3,148	4,894	4,600
Peanuts (for crushing abroad)	1	2	9	29	43	47	28	9	12	25
Safflower	---	---	---	64	130	71	77	52	45	50
Sub-total	1,688	1,989	2,115	2,361	2,940	3,050	3,078	3,210	4,961	4,691
Total exports	4,082	4,351	5,018	5,104	4,498	4,608	4,505	4,700	7,420	7,197
Domestic disappearance										
Butter	1,400	1,332	1,399	1,291	1,193	1,088	1,172	1,148	1,105	1,075
Lard	1,982	1,904	1,786	1,780	1,676	1,781	1,834	1,726	1,425	1,650
Tallow, edible	438	457	578	527	530	563	567	526	544	550
Corn oil	370	381	416	462	439	438	432	416	454	445
Cottonseed oil	1,352	1,347	1,407	1,555	1,590	1,157	1,090	1,031	1,052	1,000
Soybean oil	3,540	3,624	4,058	4,069	4,687	4,837	5,096	5,756	6,328	6,400
Olive oil	57	37	66	47	47	55	60	58	63	65
Palm oil	54	43	23	17	34	93	57	161	130	200
Peanut oil	70	69	69	59	133	172	211	168	151	200
Safflower oil	32	119	160	100	123	159	124	115	107	50
Sesame oil	1	1	1	1	2	1	1	2	2	2
Processed food oils 9/	-77	-94	-111	-79	-64	-76	-59	-61	-63	-60
Total	9,219	9,220	9,852	9,829	10,390	10,268	10,585	11,046	11,398	11,577
Total (calculated net) 10/	9,027	9,346	9,967	9,864	10,363	10,236	10,610	11,060	11,387	
Total use for food 11/	8,599	8,845	9,605	9,298	10,044	10,030	10,316	10,592	10,988	
	-- Pounds --									
Per capita disappearance										
Butter (fat content)	6.1	5.7	5.9	5.4	4.9	4.4	4.7	4.6	4.4	
Margarine (fat content)	7.3	7.8	7.6	7.9	8.3	8.6	8.5	8.5	8.7	
Lard (direct use)	7.1	6.5	6.4	6.2	5.7	5.4	5.4	5.2	4.5	
Baking and frying fats	13.1	13.6	14.0	13.7	16.0	15.7	16.1	16.7	17.6	
Salad and cooking oils	10.4	10.6	12.0	12.3	13.0	12.8	13.2	14.0	15.0	
Other edible uses	1.4	1.3	2.9	1.4	2.2	2.5	2.4	2.3	2.6	
Total (fat content)	44.8	45.5	48.8	46.7	50.1	49.5	50.4	51.3	52.8	

1/ Preliminary. 2/ Forecast except October 1 stocks. 3/ Includes estimates of butter oil, ghee, and canned butter. 4/ Includes stocks held by GSA. 5/ Shortening, margarine (fat content), and salad and cooking oils. 6/ Less than 500,000 pounds. 7/ Represents exports only; production data are not available. 8/ Includes estimates of foreign donations of fats and oils, not reported by Census. 9/ Includes exports of processed food oils not classified by kind, shortening and other secondary fats. 10/ Adjusted to reflect changes in stocks of finished products. 11/ Excludes food fats and oils used for non-food purposes, but includes non-food oils (coconut and palm kernel) used in food.

PEANUTS

Edible Use Steady; 1971 Support $267 Per Ton

The 1970 peanut crop was a record 3.0 billion pounds (farmers' stock basis), about 18% above 1969. Approximately one-third of the crop went under the loan program, with CCC acquiring most of it. CCC also acquired about 150 million pounds of shelled peanuts under the sheller purchase program. Most of these peanuts have already been diverted by CCC, either for crushing or for export. Prices to growers during the 1970/71 season averaged near the support of 12¾ cents per pound.

Domestic edible use of peanuts so far this season is running near the 1969/70 rate. In recent years usage has increased at an average rate of about 3% a year. The slowdown this season reflects lower use for salting and in peanut butter; use in peanut candy is up. Slackened demand may be associated with cautious consumer spending resulting from the slowdown in the economy, inflation, and other economic uncertainties. Also, FDA changes in mixed nuts standards of identity and labeling (effective February 15, 1971) may have affected the ratio of peanuts to other nuts in this product. For the entire marketing year, use in edible products probably will not differ much from the 1.1 billion pounds of 1969/70.

Peanut crushings in August-May were a fourth above a year ago reflecting heavy CCC diversions. For the entire marketing year they are expected to total around 750 million pounds, compared with 581 million in 1969/70.

The 1971 peanut crop will be supported at a minimum national average of $267 per ton (13.35 cents per pound), an increase of $12 over 1970. This price will not be decreased, but it may be increased if changes in the parity price or supply situation by August so warrant. Support by types is as follows: Virginia, $277; Runner, $260; Southeast Spanish, $267; Southwest Spanish, $262; and Valencia (suitable for cleaning and roasting), $277.

FLAXSEED

Crushings Up; Record Carryover

Prices of flaxseed and products during the marketing year ended June 30 averaged below 1969/70 levels, reflecting heavy supplies, lower support prices, and not much change in demand. Flaxseed prices (No. 1, Minneapolis) averaged $2.66 per bushel, down from $2.90. Linseed oil prices (raw, tanks, Minneapolis) averaged 10 cents per pound, down 2 cents. Linseed meal prices (34% protein, Minneapolis) averaged $62 per ton, down $7.

Flaxseed supplies in 1970/71 were 16% above the previous year and the largest since 1954/55. Flaxseed use totaled about half the supply, leaving carryover on July 1, 1971, around a record 28 million bushels. CCC held most of these stocks.

Flaxseed supply and use

Item	1967/68	1968/69	1969/70	1970/71[1]
	Mil. bu.	*Mil. bu.*	*Mil. bu.*	*Mil. bu.*
Beg. stocks, July 1	9.3	7.0	9.8	22.0
Production	20.0	27.1	35.1	30.0
Total supply	29.3	34.0	44.9	52.0
Crushings	15.9	14.4	14.4	18.5
Exports	5.0	9.7	5.7	3.2
Seed, feed, etc.	1.4	.1	2.8	2.3
Total use	22.3	24.2	22.9	24.0
End stocks, June 30	7.0	9.8	22.0	28.0

[1] Use estimated.

During 1970/71, farmers placed a total of 12.7 million bushels of flaxseed under price support; most of the volume was acquired by CCC. This acquisition, when added to that from previous years, raised total CCC stocks on July 1, 1971, to about 26 million bushels.

Since October about 8 million bushels of flaxseed and 40 million pounds of linseed oil have been exchanged under the CCC flaxseed-linseed oil exchange program. Contracted deliveries of linseed oil to CCC total 161 million pounds. In mid-June this program was suspended.

Linseed Oil Stocks Up; Use Declines

Domestic disappearance of linseed oil declined for the year just ended. Synthetic products such as asphalt and vinyl tiles and water based paints have had much to do with the declining use of linseed oil over the years.

Linseed Oil

Period	Production	
	1969/70	1970/71
	Million pounds	*Million pounds*
July-April	241	304
May-June	51	71
Total	292	[1] 375
	Domestic Use	
July-April	207	198
May-June	45	42
Total	252	[1] 240
	Exports	
July-April	32	41
May-June	11	
Total	44	[1] 55

[1] Estimate.

Linseed oil exports in 1970/71 probably totaled a fourth above the year before. Western Europe is the major market. U.S. linseed oil faces tough competition in foreign markets, particularly from Canada and Argentina. Last February, USDA announced an export program for the sale of raw linseed oil to countries other than the EC. In mid-June sales under this program were stopped. By that date a total of 47 million pounds had been sold for export at an average price of about 7 cents per pound. However, only a fraction of this total was exported in the 1970/71 marketing year, as exporters have 180 days in which to ship this oil.

On May 1, linseed oil stocks totaled 193 million pounds, up from the 134 million of a year ago and the largest since July 1968. Most of these stocks were held by CCC.

The 1971 crop of No. 1 flaxseed is being supported at a national average price of $2.50 per bushel, unchanged from the previous year. The program will be carried out through farm and warehouse-stored loans and purchases.

INEDIBLE TALLOW

Production and Exports Up Sharply; Use Lags

Production of inedible tallow and greases for the year ending September 30 is estimated to rise around 8%. Conversely, domestic disappearance is trailing a year ago, and for the entire year may be off 6%.

The export outlook appears brighter than the domestic situation. During October-April, exports totaled 0.4 billion pounds above 1969/70. For the entire season they may approach 2.7 billion pounds, some 30% above the previous year. Volume is up substantially for India, Korea, Japan, the Netherlands, Colombia, and Belgium-Luxembourg. Asia is the largest market for U.S. tallow, taking roughly one-half of total exports. Japan alone—the largest single market—accounts for about one-fourth of the total shipped. Western Europe is the second largest outlet, accounting for roughly one-fourth of the total. Barter sales have been heavy this year comprising about a third of the total. In previous years exports under P.L 480 programs were sizable, when as much as 10% of the total volume moved in this manner.

Inedible tallow

Period	Production		Domestic disappearance	
	1969/70	1970/71	1969/70	1970/71
	Million pounds	*Million pounds*	*Million pounds*	*Million pounds*
Oct.-April	2,822	3,076	1,624	1,508
May-Sept.	2,008	2,124	1,097	1,042
Total	4,830	5,200	2,721	[1] 2,550
	Exports and shipments		**Price per pound, prime, Chicago**	
	Million pounds	*Million pounds*	*Cents*	*Cents*
Oct-April	1,142	1,575	7.2	7.7
May-Sept.	909	1,075	8.0	
Total or average ...	2,051	[1] 2,650	7.5	[1] 7.5

[1] Estimate.

NONFOOD FATS

Per Capita Use Declined A Pound In 1970

Domestic nonfood uses of fats and oils in calendar 1970 totaled 5.3 billion pounds, about 3% below the record in 1969. On a per capita basis, use totaled 26 pounds, down 1 pound. Sharp declines in drying oil products and other industrial products more than offset sizable gains in fatty acids and animal feeds.

See tables 3 through 9 for 1970 statistics with comparisons. The general slowdown in the economy and industrial activity in 1970 probably affected the demand for nonfood fats and oils.

Table 3.--Nonfood products: Fats and oils used, by product, total and per person, 1960-70

Year	Industrial products											
	Soap		Drying oil products 1/		Fatty acids 2/		Animal feeds		Other industrial products		All industrial products	
	Total 3/	Per capita	Total	Per capita	Total	Per capita	Total	Per capita	Total	Per capita	Total	Per capita
	Mil. lb.	Lb.	Mil. lb.	Lb.	Mil. lb.	Lb.	Mil. lb.	Lb.	Mil. lb.	Lb.	Mil. lb.	Lb.
1960	872	4.8	833	4.6	1,245	7.0	504	2.8	877	4.9	4,331	24.0
1961	838	4.6	855	4.7	1,226	6.7	502	2.7	844	4.6	4,265	23.2
1962	782	4.2	891	4.8	1,319	7.1	876	4.7	909	4.9	4,777	25.6
1963	783	4.1	879	4.6	1,408	7.4	827	4.4	951	5.0	4,848	25.6
1964	786	4.1	902	4.7	1,598	8.3	838	4.4	935	4.9	5,059	26.3
1965	718	3.7	909	4.7	1,735	8.9	717	3.7	828	4.3	4,907	25.2
1966	731	3.7	923	4.7	1,957	9.9	893	4.5	928	4.7	5,432	27.6
1967	718	3.6	859	4.3	1,893	9.5	972	4.9	882	4.4	5,324	26.7
1968	703	3.5	868	4.3	1,907	9.5	1,011	5.0	863	4.3	5,352	26.6
1969	683	3.4	738	3.6	1,943	9.6	1,078	5.3	1,016	5.0	5,486	27.1
1970 4/	687	3.4	627	3.1	2,004	9.8	1,098	5.4	920	4.5	5,336	26.1

1/ Paints, varnishes, floor coverings, oil cloth, printing inks, core oils, synthetic resins, insulation, linings, packings, coated fabrics (other than oil cloth), caulking and other protective coatings. 2/ The use of whole or crude tall oil in the distillation or fractionation process is reported by Census as consumed in fatty acids. This overstates the amount of tall oil used in fatty acids. 3/ Adjusted for soap used in synthetic rubber. 4/ Preliminary.

Table 4.--Nonfood products: Fats and oils used, by kind, 1960-70

Year	Inedible tallow and grease	Linseed oil	Tall oil	Coconut oil	Soybean oil	Fish and marine oil	Castor oil	Tung oil	Palm oil	Other	Total 1/
						Million pounds					
1960	1,832	364	794	459	362	135	131	40	30	184	4,331
1961	1,737	374	774	486	342	154	123	40	37	198	4,265
1962	2,163	381	839	503	365	150	142	34	31	169	4,777
1963	2,206	394	892	533	385	89	150	31	27	140	4,848
1964	2,302	377	1,003	539	392	92	141	31	38	144	5,059
1965	2,210	340	1,027	493	420	114	150	34	17	102	4,907
1966	2,473	333	1,188	485	484	174	153	31	14	97	5,432
1967	2,559	320	1,169	450	468	107	147	37	19	48	5,324
1968	2,580	252	1,121	434	509	150	160	38	20	88	5,352
1969	2,775	281	1,174	432	468	88	167	31	24	46	5,486
1970 2/	2,593	246	1,331	446	470	69	134	28	10	8	5,336

1/ Adjusted for foreign trade and change in stocks. 2/ Preliminary.

Table 5.--Soap and synthetic detergents: Estimated sales, total and per capita, 1960-70 1/

Year	Estimated sales			Per capita			Percentage distribution	
	Soap (non-liquid) 2/	Synthetic detergent 3/	Total	Soap 2/	Synthetic detergent 3/	Total	Soap	Synthetic detergent
	Mil. lb.	Mil. lb.	Mil. lb.	Lb.	Lb.	Lb.	Pct.	Pct.
1960	1,230	3,940	5,170	6.8	21.8	28.6	24	76
1961	1,180	4,110	5,290	6.4	22.4	28.8	22	78
1962	1,210	4,420	5,630	6.5	23.7	30.2	22	78
1963	1,190	4,540	5,730	6.3	24.0	30.3	21	79
1964	1,140	4,730	5,870	5.9	24.7	30.6	19	81
1965	1,110	4,870	5,980	5.7	25.1	30.8	19	81
1966	1,100	5,000	6,100	5.6	25.4	31.0	18	82
1967	1,110	5,200	6,310	5.6	26.2	31.8	18	82
1968	1,110	5,350	6,460	5.5	26.7	32.2	17	83
1969	1,070	5,490	6,560	5.3	27.1	32.4	16	84
1970 4/	1,050	5,650	6,700	5.1	27.6	32.7	16	84

1/ Estimates of the Soap and Detergent Association and are subject to revision. Data are on the built, finished-weight basis. 2/ Excludes scouring cleansers, liquid soaps, and reported exports where possible. 3/ Includes only those solid and liquid with end-uses and characteristics similar to soap, and excludes scouring cleansers and shampoos where possible. Liquids converted to pounds on the basis of 8 pounds per gallon. 4/ Preliminary.

Table 6.--Soap: Fats and oils used, by kind, 1960-70

Year	Inedible tallow and greases	Palm oil	Coconut oil	Palm kernel oil	Tall oil	Vegetable oil foots	Rosins	Other fats and oils	Total saponifiable materials
					Million pounds				
1960	746	10	145	12	15	23	3	---	953
1961	721	---	140	14	12	21	1/	2	911
1962	683	1	141	5	10	18	---	2	859
1963	684	3	152	---	8	14	---	---	861
1964	691	---	158	---	8	19	---	---	875
1965	651	---	145	---	9	8	---	8	820
1966	667	---	150	---	9	7	---	6	839
1967	643	---	146	---	8	12	---	4	813
1968	639	---	154	---	9	6	---	4	812
1969	635	---	150	---	4	4	---	3	796
1970 2/	602	---	164	---	1	4	---	8	779

1/ Less than 500,000 pounds. 2/ Preliminary.

Table 7.--Surface Coatings: Production and fats, oils, and plastics used, 1960-70

Year	Production of paint, varnish and lacquer							Use of fats and oils		Use of plastics 5/		Drying oil-plastic usage ratio
	Total 1/	Trade sales products 2/			Industrial product finishes 3/			Total 4/	Per gallon	Total	Per gallon	
		Total	Paint and varnish	Lacquer	Total	Paint and varnish	Lacquer					
	Mil. gal.	Mil. gal.	Mil. gal.	Mil. gal.	Mil. gal.	Mil. gal.	Mil. gal.	Mil. lb.	Lb.	Mil. lb.	Lb.	Ratio
1960	663	344	344	6/	319	236	84	716	1.1	974	1.5	.7
1961	623	329	322	7	294	218	76	744	1.2	980	1.6	.8
1962	643	337	330	7	306	224	82	763	1.2	1,079	1.7	.7
1963	678	373	365	8	305	232	73	727	1.1	1,102	1.6	.7
1964	725	394	386	8	330	253	77	786	1.1	1,172	1.6	.7
1965	775	411	402	9	365	279	86	790	1.0	1,252	1.6	.6
1966	837	416	405	11	421	317	104	810	1.0	N.A.	N.A.	N.A.
1967	782	398	389	9	383	302	81	740	.9	1,185	1.6	.6
1968	843	424	413	11	419	328	91	747	.9	N.A.	N.A.	N.A.
1969	880	430	420	10	450	345	105	623	.7	N.A.	N.A.	N.A.
1970 7/	827	428	414	14	399	304	95	534	.6	N.A.	N.A.	N.A.

1/ Bureau of the Census. 2/ Census defines trade products as "stock type" shelf goods normally distributed through wholesale--retail channels and purchased by painters and others for general application on new construction or for general maintenance. 3/ Census defines industrial finishes as those formulated to meet conditions of application and use of the product to which applied and are generally applied as part of the manufacturing process. Industrial finishes also include coatings specially formulated for industrial maintenance use requiring protection against extreme temperatures, fungi, chemicals, fumes, etc. 4/ Includes an estimated 90-95% of the oil listed by Census as used in synthetic resins which end up in protective coatings. 5/ Stanford Research Institute, Chemical Economics Handbook. 6/ Trade sales of lacquers included in industrial lacquers. 7/ Preliminary.

Table 8.--Fats and oils used in drying oil products, by kind of oil, 1960-70

Year	Linseed oil	Soybean oil	Tung oil	Fish oil	Castor oil	Oiticica oil	Tall oil	Other fats and oils	Total 1/
	Million pounds								
1960	351	172	38	49	85	15	86	38	833
1961	365	163	38	73	75	7	96	38	855
1962	374	166	32	70	92	16	104	37	891
1963	388	178	31	22	101	5	105	48	879
1964	372	188	31	41	111	10	102	47	902
1965	328	208	34	80	107	8	117	27	909
1966	310	214	33	130	89	8	114	25	923
1967	315	192	37	65	92	1	107	48	859
1968	251	193	38	122	89	11	109	56	868
1969	271	191	31	63	61	12	88	21	738
1970 2/	230	169	29	24	48	4	75	48	627

1/ Excludes fats and oils used in fatty acids, many of which are used in drying oil products. 2/ Preliminary.

Table 9.--Fatty acid production and fats and oils used in manufacture, 1960-70

Year	Fatty acid production (all grades)	Fats and oils used in producing fatty acids						Fatty acid production as % of total fats and oils used
		Inedible tallow and grease	Tall oil 1/	Coconut oil	Vegetable foots	Other	Total	
	Million pounds	Million pounds	Million pounds	Million pounds	Million pounds	Million pounds	Million pounds	Percent
1960	708	386	674	83	77	24	1,245	57
1961	706	356	676	74	82	37	1,226	58
1962	785	411	720	56	92	41	1,319	59
1963	836	449	779	51	89	39	1,406	59
1964	936	485	925	54	79	55	1,598	59
1965	1,041	540	1,023	54	72	46	1,735	60
1966	1,134	583	1,171	60	79	64	1,957	58
1967	1,089	545	1,167	56	81	43	1,892	58
1968	1,108	573	1,144	64	82	44	1,907	58
1969	1,138	608	1,154	56	79	46	1,943	59
1970 2/	1,123	585	1,230	60	81	40	2,004	56

1/ The use of whole or crude tall oil in the distillation or fractionation process is reported by Census as consumed in fatty acids. This overstates the amount of tall oil going into fatty acids as the fractionation process also yields rosin acids, and secondary products. 2/ Preliminary.

904608

WHALING BAN TO HALT U.S. SPERM OIL USE

by
George W. Kromer

ABSTRACT: The United States is the world's leading importer and consumer of sperm oil, but this traditional role will be relinquished in 1972. The sperm whale has been placed on the U.S. endangered species list to prevent its worldwide extinction. Sperm oil imports will be banned after December 1, 1971, and domestic whaling operations outlawed. U.S. industry has been dependent almost entirely upon imports of sperm oil for use in a wide array of specialty products—especially transmission fluids and machine oils. For many applications there are no adequate replacements and the fats and oils industry likely will lose a good share of this market to substitutes.

KEY WORDS: Sperm whale, sperm oil use

The United States has been a major importer and consumer of sperm whale oil, accounting for around a fifth of world production during the past decade. But our traditional role will disappear after December 1, 1971, because sperm oil imports will be banned and the small domestic whaling industry disbanded.

U.S. industry has been consuming around 55 million pounds of sperm oil annually in recent years. The refined oil is used in a wide variety of specialty products, particularly as an ingredient in automatic transmission fluids for motor vehicles, in the tanning process and treatment of good quality leather, in machine oils for metal manufacture, as well as in many other lubricants. For some major uses of sperm oil there are no known adequate fats and oils substitutes. Nevertheless, some companies may be forced to use substitutes.

Sperm oil has been in the U.S. stockpile for some 20 years as it is considered a strategic and critical commodity of vital importance for defense purposes. The national stockpile currently amounts to 23 million pounds of refined (winterized) oil.

Sperm Whale an Endangered Species

Most provisions of the Endangered Species Conservation Act of 1969 (Public Law 91-135) became effective in June 1970. At that time the U.S. Department of Interior placed 8 species of whales on the "U.S. List of Endangered Foreign Fish and Wildlife" to prevent their worldwide extinction. The list includes the finback, sei, and sperm whales—which are now the only species seriously sought by commercial pelagic whalers—as well as the rarer bowhead, blue, humpback, right, and gray whale.

The U.S. ban on imports of oil, meat, and other products from these species went into effect on December 2, 1970. However, special government import permits were issued through June 15 to existing importers who showed they would suffer economic hardship from this ruling. The permits were limited to contracts made before the effective date of this order, authorizing imports of specified quantities of oil and products through December 1, 1971. The industry usually contracts a year in advance for its annual import requirements for sperm oil.

The government has also terminated domestic licensing of commercial hunting of whales. The last remaining whale company in the United States received its final license authorizing a maximum catch of 166 whales (40 fin, 51 sei and 75 sperm) until November 1. In December 1971 commercial whaling for these species will be outlawed.

Whale oils other than sperm have been of minor commercial importance in the United States. Sperm oil consists mainly of inedible liquid waxes. Baleen whale oil generally is a true fat which may be used for edible purposes. Sperm oil is obtained from the head cavities, blubber, meat, and bones of the sperm whale. The crude oil is normally processed to produce refined sperm oil and stearin in the ratio of about 80-85% refined oil to 15-20% stearin. The stearin may be further processed into spermaceti wax.

U.S. Industry Depends Upon Imports

Annual domestic requirements for sperm oil (around 55 million pounds) are supplied almost entirely from imports. U.S. production has comprised only about 1 to 2% of usage.

Sperm oil imports ranged from 58 million pounds in 1966 to 46 million in 1969, averaging about 54 million pounds per year. Nearly 90% of U.S. imports are as crude oil, brought in chiefly from Japan, Peru, South Africa, and the Netherlands. There are now only 3 firms in the United States that import and refine crude sperm oil for many users producing a wide array of specialty products.

U.S. demand for sperm oil is relatively inelastic. The oil has unique physical and chemical properties not available in other domestic fats and oils. It remains stable under high temperatures and pressures, does not gum and has wide tolerances for variations in temperatures. These special qualities make sperm oil desirable as an ingredient in many types of

Table 10.--Sperm oil: U.S. supply, disposition, utilization and price, 1960-71

Calendar year	Supply						Disposition			Census reported factory consumption			Price (drums, N.Y.)	
	U.S. production	Imports			Stocks Jan. 1 1/	Total supply	Exports	Domestic disappearance	Total	Lubricants and similar oils	Other inedible products	Total	Natural, 45°	Bleached, winter 45°
		Crude	Refined	Total										
	-- Million pounds --												Cents per pound	
1960	0.1	32.3	4.0	36.3	47.7	84.1	1.4	50.8	52.2	32.4	14.5	46.9	14.4	15.4
1961	.7	52.2	6.4	58.6	31.9	91.2	1.2	51.1	52.3	33.3	13.5	46.6	16.1	17.1
1962	.5	59.7	7.3	67.0	38.9	106.4	2.7	47.2	49.9	22.0	13.2	35.2	17.1	18.1
1963	.7	60.5	5.5	66.0	56.5	123.2	5.6	46.1	51.7	23.9	12.2	36.1	17.5	18.5
1964	.4	46.7	12.2	58.9	71.5	130.8	5.6	56.2	61.8	18.5	15.1	33.6	16.8	17.8
1965	1.1	63.4	13.8	77.1	69.0	147.2	5.9	56.4	62.3	18.4	16.4	34.8	14.9	15.9
1966	.6	50.5	7.6	58.1	84.9	143.6	4.4	80.1	84.5	22.5	6.5	29.0	14.5	15.5
1967	1.0	43.4	7.9	51.3	59.1	111.4	1.8	43.3	45.1	19.3	17.9	37.2	14.5	16.4
1968	.9	49.1	8.4	57.5	66.3	124.7	4.1	69.4	73.5	18.6	21.3	39.9	14.5	17.5
1969	.4	39.5	6.5	46.0	51.2	97.6	3.3	50.2	53.5	18.9	22.6	41.5	15.5	17.4
1970	.6	49.6	6.0	55.6	44.1	100.3	5.1	52.5	57.6	18.4	19.8	38.2	21.7	22.6
1971 2/	.5	3/41	3/4	3/45	42.7	88	5	45	50				4/28.0	4/29.0

1/ Includes GSA stockpile of 23 million pounds. 2/ Forecast except January 1, 1971 stocks. 3/ Estimate based on commercial permits issued by U.S. Department of the Interior. 4/ January-June 1971 average.

Table 11.--Sperm oil: U.S. imports by country of origin and total value, 1960-71

Country of origin	Calendar year											January-April	
	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1970	1971
	-- Million pounds --												
Japan	1.2	24.2	39.1	17.8	27.8	46.3	26.4	6.0	32.9	21.0	22.8	10.5	2.1
Peru	18.6	12.0	4.4	19.9	8.0	11.6	6.5	7.0	8.7	11.0	14.4	4.7	---
South Africa	---	---	---	3.3	4.0	3.8	21.1	2.2	3.4	3.3	6.5	1.1	3.3
Netherlands	8.7	6.4	16.2	14.6	5.6	---	---	20.4	---	3.6	5.5	---	2.9
United Kingdom	3.2	3.7	2.2	1.7	3.2	2.5	2.8	2.6	1.8	1.6	2.0	.9	.3
Norway	4.5	9.1	5.1	7.4	9.8	12.5	1.3	1.1	6.6	1.6	.8	---	.2
Others	.1	3.1	---	1.3	.4	.3	---	12.1	4.1	3.9	3.6	2.2	1.3
Total imports	36.3	58.6	67.0	66.0	58.9	77.1	58.1	51.3	57.5	46.0	55.6	19.5	10.2
Value of imports:													
Total (thou.dol.)	2,945	4,838	6,379	6,462	5,275	5,758	4,654	3,717	3,573	3,150	5,944	1,617	1,659
Per pound (cent)	8.1	8.3	9.5	9.8	9.0	7.5	8.0	7.2	6.2	6.8	10.7	8.2	16.2

lubricants—especially in high-quality transmission oils and in metal manufacture (cutting oils and coolants).

Unfortunately, census data are not available on specific end-uses of sperm oil. As a matter of fact, many of the processes and lubricants requiring this oil are trade secrets. Census factory consumption data show that approximately one-half the reported use of sperm oil as going into "lubricants and similar oils" and the remainder in "other inedible" products.[1] The "other inedible" category probably includes use in buffing compounds, fatty acids, cosmetics, textiles, pharmaceuticals, and many other minor uses.

Stocks of sperm oil (crude and refined) at refineries and warehouses (excluding GSA inventory) are usually large in relation to domestic demand—often equal to half a year's requirement. Seasonality in sperm oil production and imports contrast to a relatively steady domestic offtake, necessitating large industry reserves.

The United States regularly exports some refined sperm oil, mostly to Canada and Western Europe. Exports totaled 5 million pounds last year.

Sperm Oil Prices Highest Since 1947

The price of sperm oil in drums increased steadily from 17 cents per pound in the summer of 1969 to 29 cents (26 cents in bulk, tankcars) this spring. The sharpest rise has occurred since mid-1970 when prices shot up about 8 cents—the period when the import ban on sperm oil was being considered.

Sperm oil prices
(bleached, winter 45°, drums, New York)

Period	1967	1968	1969	1970	1971
	Cents per pound				
Jan.-March	15.5	17.5	17.5	18.4	29.0
April-June	15.5	17.5	17.4	21.1	29.0
July-Sept. .	17.1	17.5	17.0	23.3	
Oct.-Dec. .	17.5	17.5	17.7	27.7	
Year . . .	16.4	17.5	17.4	22.6	

Current prices are the highest since the 32 cents level in the summer of 1947, when all fats and oils were in short supply. Sperm oil prices likely will rise further this year as imports decline and stocks are worked down.

Sperm Oil Supply Down in 1971

Because of the prospective decline in imports, U.S. supplies of sperm oil in 1971 are expected to be around 88 million pounds compared with 100 million last year.

Imports of sperm oil this year may total about 45 million pounds, a fifth less than in 1970. This estimate is based on special permits issued by the Interior Department, authorizing importation of sperm oil through December 1, 1971. As usual, about 90% of the imports will be crude oil.

Domestic use of sperm oil for 1971 is estimated at about 45 million pounds and exports about 5 million. This will reduce stocks by next January 1 to the lowest level since 1961. Apparent domestic disappearance so far in 1971 is lagging, probably reflecting the reduced imports and higher prices. Thus, the U.S. industry has enough sperm oil to meet 1971 prospective requirements and part of 1972's. This is a relatively short time to develop substitutes for many uses.

U.S.S.R. Leading Producer of Sperm Oil

World production of sperm whale oil in 1971 is expected to decline about 5% from the 285-million-pound level of the past 2 years. Output in recent years has been somewhat below the 1964-67 average of 333 million pounds but above the 250-million average of the early 1960's.

The Soviet Union and Japan are the world's major producers of sperm oil. In 1970, the U.S.S.R. accounted for 63% of total world production and Japan about 21%. In the early 1960's Japan was the major producer but Russia took over first place beginning in 1963. The U.S.S.R. annual output of sperm oil increased from 55 million pounds in 1961 to a record 200 million in 1967, then declined, and in 1970 was 176 million pounds.

About two-thirds of the world output of sperm oil enters international trade. The U.S.S.R. and Japan are the principal exporters. The United States, the United Kingdom, and West Germany are the principal importers.

World Whale Catch Declining

Total whales killed (baleen and sperm) declined rather steadily from 66,090 in the 1961/62 season to 41,735 in 1968/69. The drop was mostly in the baleen catch. In the early 1960's baleen whales comprised about two-thirds of all whales killed and sperm whales about a third. In 1968/69, however, the baleen kill represented only 42%.

Whales killed, world total[1]

Season	Whales killed	Baleen whales		Sperm whales	
		Total	% of total	Total	% of total
	Thou.	*Thou.*	*Pct.*	*Thou.*	*Pct.*
1960/61 . .	65.6	44.5	68	21.1	32
1961/62 . .	66.1	42.8	65	23.3	35
1962/63 . .	63.6	35.7	56	27.9	44
1963/64 . .	63.0	33.7	54	29.3	46
1964/65 . .	64.7	39.1	61	25.5	39
1965/66 . .	57.9	30.5	53	27.4	47
1966/67 . .	52.2	25.8	49	26.4	51
1967/68 . .	46.6	22.6	48	24.1	52
1968/69 . .	41.7	17.6	42	24.1	58
1969/70 . .					

[1] International Whaling Statistics.

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[1] Census reported factory consumption for sperm oil in recent years has averaged about two-thirds that of apparent total domestic disappearance (calculated from U.S. production, imports, changes in stocks and exports). The difference represents unreported consumption.

Table 12.--Sperm oil: World production, by major producing countries, 1960-71

Country	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971 1/
	-- Million pounds --											
U.S.S.R.	62	55	58	104	128	173	176	200	154	172	176	175
Japan	73	70	75	84	103	85	74	73	75	68	59	53
Norway	26	29	28	18	20	22	12	10	1	2	2/	---
South Africa	17	15	23	23	24	28	28	20	13	16	15	15
Australia	4	7	9	9	11	10	9	9	9	10	10	10
Peru	28	29	25	23	15	8	6	2	10	14	13	10
Chile	12	14	14	11	9	2	6	4	---	---	---	---
Portugal	6	5	6	7	6	6	4	4	1	2	2	2
Others	16	16	22	20	14	6	7	8	4	4	4	4
World total	244	240	260	298	330	340	322	330	268	288	279	269
	-- Percent --											
U.S. imports as % of world production	15	25	26	22	18	23	18	15	22	16	20	17

1/ Forecast. Foreign Agricultural Service, Fats and Oils Division. 2/ Less than 500,000 pounds.

Table 13.--U.S. whale catch, by species, 1960-70

Species	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
	-- Number --											
Blue	1	2	2	6	2	4	---	---	---	---	---	
Bottlenose	2	4	---	2	1	2	1	---	---	---	---	
Brydes	---	---	---	---	---	---	2	---	---	---	---	
Fin	138	118	124	21	147	114	42	44	38	31	5	
Gray	---	---	---	---	1/20	---	1/52	1/99	1/66	1/74	---	
Humpback	67	64	39	55	27	4	---	---	---	---	---	
Killer	---	---	1	1	---	---	1	1	---	---	---	
Sei	47	51	22	97	13	22	60	3	14	10	4	
Sperm 2/	16	104	60	77	64	97	68	1/100	1/84	1/68	1/64	
Total	271	343	248	259	274	243	226	247	202	183	73	

1/ Taken under special scientific permits. 2/ The sperm whaling season is April 1 through November 30. The season for other whales is April 15 to October 15.
U.S. Department of Commerce.

Table 14.--Whales killed: World total, by areas and types, 1960-69

Season	Total of whales killed	In Antartic			On other grounds		
		Total	Baleen whales	Sperm whales	Total	Baleen whales	Sperm whales
1960-61	65,641	41,127	36,327	4,800	24,514	8,184	16,330
1961-62	66,090	38,552	33,723	4,829	27,538	9,051	18,487
1962-63	63,579	30,159	25,388	4,771	33,420	10,333	23,087
1963-64	63,001	29,942	23,231	6,711	33,059	10,515	22,544
1964-65	64,680	32,563	28,211	4,352	32,117	10,921	21,196
1965-66	57,891	24,680	20,125	4,555	33,211	10,388	22,823
1966-67	52,238	20,225	15,265	4,960	32,013	10,549	21,464
1967-68	46,645	15,080	12,512	2,568	31,565	10,053	21,512
1968-69	41,735	11,478	8,796	2,682	30,257	8,797	21,460
1969-70	N.A.	11,949	8,859	3,090	N.A.	N.A.	N.A.

International Whaling Statistics. N.A. -- Not available.

Gradual declines in the estimated whale population, extended application of conservation measures, and declining catch quotas are factors responsible for the general downtrend.

Sperm Whale Catch Mostly in North Pacific

The principal whale fisheries (the whale is a mammal) are in the Antarctic and North Pacific. Sperm whales killed worldwide declined from a peak 29,255 in 1963/64 whaling season to 24,142 in 1968/69. The proportion caught in Antarctic pelagic expeditions fell from 23% of the world total to 11%. Sperm whales killed on other grounds (mainly the North Pacific) now account for 89% of the world total.

Sperm whales killed, world total[1]

Season	Sperm whales killed	In Antarctic		On other grounds	
		Total	% of total	Total	% of total
	Thou.	*Thou.*	*Pct.*	*Thou.*	*Pct.*
1960/61 ..	21.1	4.8	23	16.3	77
1961/62 ..	23.3	4.8	21	18.5	79
1962/63 ..	27.9	4.8	17	23.1	83
1963/64 ..	29.3	6.7	23	22.5	77
1964/65 ..	25.5	4.4	17	21.2	83
1965/66 ..	27.4	4.6	17	22.8	83
1966/67 ..	26.4	5.0	19	21.5	81
1967/68 ..	24.1	2.6	11	21.5	89
1968/69 ..	24.1	2.7	11	21.5	89
1969/70 ..		3.1			

[1] International Whaling Statistics.

U.S. Outlook

Sperm oil imports into the United States and domestic whaling operations will cease by the end of calendar 1971. Shortly thereafter, American industry will have to substitute other ingredients for the 55 million pounds of winterized sperm oil traditionally consumed annually in lubricants and other specialty products.

There are no known products based on fats and oils adequate to replace sperm oil in many of its specialty uses. Possible replacements frequently mentioned are jojoba oil, limnanthes oil and crambe oil. However, before a product can be called a sperm oil replacement actual performance in specific applications must be proven. Probably no one product will replace sperm oil in all its uses. The USDA is carrying on intensive research to develop a sperm oil replacement from agricultural fats and oils. The industry is also looking at synthetic substitutes tailored-made for use in specialty lubricants.

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904609

PRESENT AND POTENTIAL MARKETS FOR SAFFLOWER OIL

by

Harry O. Doty, Jr. and John V. Lawler[1]

ABSTRACT: The most important use of safflower oil is in food products, particularly margarine and salad and cooking oils. Future demand may depend upon whether consumers, concerned about the possible effect of saturated fat foods on coronary heart disease, prefer the very high unsaturation that safflower oil contributes to food fat products. The only industrial market for safflower oil is drying oil uses and this market is declining because of competition from synthetic resins, especially in latex paint. Safflower oil has the advantage of contributing non-yellowing properties to oil paints, printing ink, etc.

KEY WORDS: Safflower oil, safflower, safflower seed

This article analyzes present and potential U.S. markets for safflower oil and evaluates its competitive position, based partly on a survey of manufacturers in the major end use markets for vegetable oils and oilseed processors in the major safflower producing areas of Arizona and California.[2]

Safflower is one of the oldest cultivated plants. Historically, it has been grown near the Mediterranean Sea and India. Several agricultural experiment stations in the western Great Plains States began research in the 1920's to develop safflower as a U.S. oil crop. Safflower grown in this area was not irrigated and because of low yields, interest in the crop there in the middle and late 1960's was slight. In contrast to this experience in the Great Plains, safflower has had significant success in irrigated areas of California and Arizona since the middle 1950's, and these areas now account for almost all U.S. production.

Safflower seed, 1970

State	Acreage		Yield per acre harvested
	Planted	Harvested	
	Acres	*Acres*	*Pounds*
California	214,000	201,000	1,870
Arizona	11,000	11,000	2,500
	Production	Contract price to grower	Crop value
	Tons	*Dol./ton*	*Thou. dol.*
California	188,000	95	17,860
Arizona	13,800	95	1,311

In 1970 the food use of safflower oil totaled 80 million pounds and industrial use about 20 million.

SAFFLOWER OIL EDIBLE MARKETS

Fats have become an increasingly important source of food energy for Americans. We used almost 11 billion pounds of fats and oils (53 pounds per capita) domestically in foods in 1970 compared with about 7 billion pounds (46 pounds per capita) in 1950. Most of this increase came from greater use of cooking and salad oils and shortening, which in turn reflected the increasing popularity of fried chicken and fish, snack foods, salads, and convenience foods.

Medical research since the 1950's has indicated that a relationship may exist between diets high in saturated fats and heart disease. Of course, other factors, such as overweight, excessive smoking, and hypertension are also known to increase the risk of developing heart disease. The Food and Nutrition Board of the National Academy of Sciences believes that the information developed to date does not justify firm recommendations for radical dietary changes. However, it does believe the necessity of a lower fat diet than the present level, and some substitution of polyunsaturated fat for saturated fat may be indicated. Highly unsaturated vegetable oils have been found to cause large and sustained decreases in plasma cholesterol. Safflower oil, having the highest unsaturation of the commercially available edible oils, would be a logical choice of raw material to replace more saturated fats and oils as the fat component in food products.

Safflower oil's price is usually higher than competitive soybean oil in the major consumption areas. So the extent of the future food use of safflower oil may depend somewhat upon the result of medical research into causes and remedies for coronary heart disease.

The Margarine Industry

Consumption of margarine increased from an annual average of 1.7 billion pounds in 1959-61 (9.3 pounds per capita) to over 2.2 billion pounds in 1970 (11.0 pounds per capita) an annual average growth rate of 2.9%. Margarine is the most important single use for safflower oil, utilizing an estimated 22 million pounds in 1970. Safflower oil began to be used in margarine in volume during the early 1960's because of the widespread public interest in polyunsaturated margarine.

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[1] Agricultural Economists, Economic Research Service.

[2] Safflower meal markets were discussed in *Feed Situation*, May 1971, "Present and Potential Markets for Safflower Meal." by Harry O. Doty, Jr., and John V. Lawler.

Safflower oil's primary technological advantage in making margarine is its greater unsaturation than corn and other edible oils. However, its closest competition in supplying unsaturation to margarine is corn oil. Since the 2 oils both make a high-quality margarine, the competition may center around price, polyunsaturation, and identification by the public. Safflower oil has a definite advantage over corn oil and other edible oils in polyunsaturation.

Fatty acid content of safflower and major competing edible vegetable oils

Oil	Saturated acids	Unsaturated acids	
		Mono-	Poly-
	Percent	*Percent*	*Percent*
Safflower	8-11	10-19	73-79
Corn	12-14	28-32	56-58
Cottonseed	26-31	14-24	50-55
Soybean	10-17	14-35	55-69

Source: John J. Blum, Journal of the American Oil Chemists' Society, Vol. 43, No. 6, June 1966, page 416.

In the early 1970's use of safflower oil in margarine is expected to remain at about the level of recent years, provided current economic and legal factors affecting margarine raw materials remain unchanged. Currently, while there is a ban on advertising which claims the use of polyunsaturated fat will lessen heart attacks, identification or emphasis of the product's polyunsaturation is permitted.

A possible minimum potential market for relatively high unsaturated vegetable oils would be the amount of both corn and safflower oil used in margarine. This quantity has been slightly more than 200 million pounds per year during the last 5 years. If safflower oil's price should become more competitive with soybean oil's price and there were scientific confirmation of the medical benefits of safflower oil in the treatment of coronary heart disease, safflower oil might displace some soybean and other oils in margarine. Corn oil probably could not supply the new demand because it is a byproduct of the corn starch industry and its supply is inelastic.

Prices of selected edible vegetable oils (crude tankcar basis) in 1970 were as follows:

	Cents per lb.
Safflower (N.Y.)	16.3
Corn (Decatur)	16.5
Soybean (Decatur)	12.0
Cottonseed (Valley)	13.4

The Cooking and Salad Oil Industry

Cooking and salad oils, rather than solid or plastic fat, are for functional reasons used in salads, salad dressing products, and for packing various canned fish and meat products. For many kinds of deep fat frying, either a liquid oil or a plastic fat may be used. However, in a large snack-food producing factory, cooking oils may be favored since they can be moved in a piping system without heat and measured volumetrically as well as gravimetrically.

The volume of salad and cooking oils used increased from an annual average of 1.6 billion pounds in 1959-61 (9.0 pounds per capita) to over 3.1 billion pounds in 1970 (15.5 pounds per capita), an average annual growth rate of 7%. The increase has been primarily in soybean oil. The quantity of safflower oil used in this market in 1970 was 12 million pounds.

When safflower oil is used at cooking temperatures some formation of solid (polymeric) particles takes place; the particles adhere to the cooking vessel and influence the flavor of food. Soybean oil and cottonseed are better in this respect. Due to this characteristic and because of its high unsaturation, safflower oil is probably consumed as a salad oil rather than as a cooking oil. Manufacturers and retail distributors (large retail chain stores) of cooking and salad oils indicated that the demand for safflower salad oil has not been large enough for them to incur the additional manufacturing, storage, and marketing expenses which would result from their carrying another salad oil.

The volume of safflower oil used as cooking and salad oil is expected to remain at about the same level as long as the price relationships with other oils continue and the advertising restrictions remain. About 240 million pounds of corn oil have been used per year recently in the salad and cooking oil market. Safflower oil might capture much of the unsaturated salad market if price and legal factors were favorable.

The Shortening Industry

Shortening is a major end-use for vegetable oils. Domestic consumption grew from an annual average of over 2.2 billion pounds in 1959-61 to 3.5 billion pounds in 1970—an average annual growth rate of 4.5%.

Safflower oil use in shortening has been very small, averaging less than 4 million pounds annually in recent years. Safflower oil's relatively high unsaturation causes it to have less stability at baking temperatures than the more saturated fats and oils. When safflower oil is hydrogenated to convert it to a plastic form, the linoleic acid content rapidly decreases and it approaches the saturation content of other hydrogenated vegetable oils such as soybean and cottonseed oil.

In the future probably only small quantities of safflower oil will be used in shortening. The oil has no unique contribution to make as a raw material and there is little public interest in the identification of oils used in baked or deep-fried products.

The Mellorine Industry

Mellorine production is limited because it is prohibited or restricted by the laws of some States. Over two-thirds of the 1969 mellorine production was in Texas (42%) and California (26%). In 1969, mellorine production was about 80% of the ice cream production in Texas and 20% in California.

Safflower oil use in mellorine has 2 technological drawbacks: (1) safflower oil possesses an identifiable flavor, according to some mellorine manufacturers even after it is refined, bleached, and deodorized and (2) use of liquid safflower oil to increase unsaturation in the mellorine, requires greater use of stabilizers than if a partially hydrogenated (more saturated) vegetable oil were used. The quantity of vegetable oils used in mellorine was estimated for 1962-70 to be about 18 to 20 million pounds annually. Cottonseed and soybean oils accounted for about 85%. Other oil constituents include coconut, peanut, corn, and safflower oils. Safflower oil use in mellorine is quite small, probably less than 200,000 pounds annually.

Safflower oil is being used to manufacture small quantities of synthetic and filled milk. Unsaturation will be the most important factor in the potential use of safflower oil in dairy-type products.

High Oleic Safflower Oil

A new kind of safflower seed has been developed with considerably different chemical characteristics in the oil than regular safflower oil. This new oil is currently referred to as high oleic safflower oil. It contains about 80% oleic acid compared to about 13% oleic acid in the regular safflower oil. The linoleic content of high oleic safflower oil is about 12% (compared with 78% for regular safflower oil) and the saturated acids (palmitic and stearic) are about 7%. The iodine value is about 91 compared with about 144 for regular safflower oil and the oxidative stability is 3½ times that of regular safflower oil. High oleic safflower oil would probably find greater use for edible purposes than for industrial purposes such as paint and printing ink, which to a very large degree require a drying oil of relatively high unsaturation.

High oleic safflower oil would probably find primary use as a cooking or frying oil because of its excellent stability and its bland flavor. Olive, peanut, and coconut oils are ones which high oleic safflower oil could most likely displace in cooking or deep-frying.

Peanut oil use as salad and cooking oil (139 million pounds in 1970) may be an easier market for high oleic safflower to enter than the similar olive oil market (62 million pounds in 1970). Imported olive oil has a more distinct flavor than peanut oil and has a cultural tradition among American descendents with a Mediterranean background. To have any significant penetration of this peanut oil market, the price of high oleic safflower oil would have to be close to, if not match the recent price range of peanut oil, 12 to 16 cents a pound, unless significant performance advantages could be demonstrated.

The bland flavor of high oleic safflower oil enables it to be considered for many uses where coconut oil is specified because of its blandness and stability. However, since the unsaturation (or iodine value) of coconut oil is quite low (I.V.=7.5-10.5), it seems unlikely that high oleic safflower oil would be considered for many plasticizer uses of coconut oil. The volume of coconut oil consumed in recent years for all uses varies between 700 and 900 million pounds annually.

High oleic safflower oil might be used for some of the nondrying oil uses of castor oil (lubricants, plasticizers, and hydraulic fluids) since the iodine numbers are about the same (castor oil I.V.=81-91). About 6 to 12 million pounds of castor oil are used annually for these purposes.

The name of high oleic safflower oil might be changed. Under another name this new vegetable oil would be judged on its own merits and not on the advantages and disadvantages associated with regular safflower oil.

SAFFLOWER OIL INDUSTRIAL MARKETS

The annual inedible use of fats and oils is about 5 billion pounds, 26 pounds per capita (one-half of the edible use). A major use is in drying oil products, taking advantage of their "drying" or unsaturation properties. Drying oils in a mixture of solvent, pigment, and sometimes a synthetic resin find most of their use (paint, printing ink, and artists' oil paints) where a thin film is desired on a surface for protection or decoration purposes. There are smaller industrial uses of vegetable oils such as epoxidized plasticizers, calking and putty products, core oil binders, and concrete protection. The drying oil markets have been declining since World War II because of the strong competition from synthetic resins, especially in the form of latex paint.

Safflower oil's only significant use in the industrial market is in drying oil products.

The Paint Industry

The use of vegetable oils in paint formulations is as old as the history of paint and they will remain an important raw material for the paint industry in the foreseeable future despite intense technological and economic competition. Drying oil use in paints and alkyd resins in this country in 1970 was about 620 million pounds, with linseed and soybean oils comprising more than half of the market. Tall, tung, fish, castor and safflower are the other major drying oils.

Safflower oil usage by the paint industry ranged between 10 and 18 million pounds annually in 1964-70, or about 2% of the total drying oils consumed by the paint industry for those years. The use of different types of paints and safflower oil paints in the various paint markets, in 1963, 1966, and estimates for 1972 based on information from industry contacts are shown below.

Percentage distribution of interior, exterior, and industrial paints, by type, 1963, 1966, and 1972 estimate

Type of paint	1963				1966				1972 estimate			
	Trade sales		Ind.	Total	Trade sales		Ind.	Total	Trade sales		Ind.	Total
	Int.	Ext.			Int.	Ext.			Int.	Ext.		
	Pct.	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*
Oil	10	14	48	72	8	12	45	65	4	6	41	51
Latex	15	5	([1])	20	16	7	1	24	18	14	3	35
Other nonoil	---	---	8	8	---	---	11	11	---	---	14	14
Total	25	19	56	100	24	19	57	100	22	20	58	100
Safflower oil	42	21	37	100	34	34	32	100	33	26	41	100

[1] Less than one percent.

Safflower oil usage in paints is expected to grow from an estimated 18 million pounds in 1966 to 23 million pounds in 1972—a 4.2% average annual growth rate.

Ten technological improvements in safflower oil paints were suggested by paint and resin manufacturers. Six improvements suggested were concerned with some aspect of safflower oil's unsaturation: greater iodine value or more unsaturation, faster drying time, and better film surface hardness and mar resistance. Other suggestions included better non-yellowing, improved shelf life, greater adhesion, and better pigment wetting.

The Printing Ink Industry

Drying oil has been an important raw material for printing ink because of its film-forming ability. Drying oils (especially linseed) have pigment-wetting properties, good transfer qualities, bind firmly to the paper, and impart the necessary drying properties to the ink. Consumption of drying oils in the manufacture of printing inks averaged about 60 million pounds annually in recent years. The pattern of estimated drying oil consumption in printing ink was: linseed oil, 78%; tall oil, 10%; tung oil, 5%; soybean oil, 3%; oiticica oil, 2%; safflower oil, 1%; castor oil (including dehydrated castor oil), 1%. Fish, coconut, and other oils accounted for less than 1%.

The Calking and Glazing Industry

Another use of drying oils is in the manufacture of putty, glazing, and calking compounds. As in the case of paint, printing ink, and artists' oil colors, a vegetable drying oil is mixed with a pigment or pigment-like material. In contrast to the above 3 drying oil products which are applied to a surface in a thin film, putty, glazing, and calking compounds are usually applied in a relatively thick form.

About 60 million pounds of drying oils are estimated to be used annually in putty, and glazing. Soybean oil is the biggest volume vegetable oil, about 45%, linseed oil is about 32%, and tall oil is about 12%. The use of linseed oil has been declining because its use alone results in a hard and brittle putty on aging. Safflower oil accounts for about 6% or 3½ million pounds of the oils used in this market. Fish, dehydrated castor, and tung oils account for about 5%.

The Artists' Oil Paint Industry

Linseed oil has been the dominant drying oil used in artists' oil paints. About 1 to 3 million pounds of drying oils are used annually to make artists' oil paints. Linseed oil probably constitutes about 80% of this market. Safflower, poppyseed, walnut, and soybean oils are also used. In addition, an acrylic latex paint for artists has been developed in the last 10 years. Polymer paint holds perhaps 20% or more of the artists' paint market.

The penetration of safflower oil into the artists' oils market could be improved if the pigment wetting properties of safflower oil were made equal to or superior to those of linseed oil and if its brushability were improved.

The Cosmetic Industry

The cosmetic industry is a potential market for safflower oil because (1) cosmetic formulations frequently contain various vegetable and animal oils, fats, and waxes; (2) the ingredients must be of an edible grade or pure and nontoxic; (3) for some ingredients the cost is not too important if the desired performance or advertising benefit can be obtained.

However, since safflower oil's unsaturation is high, making the cosmetic product unstable, it may not penetrate the cosmetic market. In contrast, high oleic safflower oil might find such use because of its good stability.

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Table 15.--Domestic disappearance of food and nonfood fats and oils, by end products, total and per person, year beginning October by quarters, with comparisons, 1968 to date

Year and Quarter	Unit	Food							Nonfood				All products (fat content)
		Butter (actual weight)	Margarine (actual weight)	Lard (direct)	Baking and frying fats (shortening)	Salad and cooking oils	Other edible 1/	Total (fat content)	Soap 2/	Drying oils 3/	Other 4/	Total	
1968-69													
Oct.-Dec.:													
Total	Mil. lb.	321	575	285	859	679	123	2,670	106	228	990	1,324	3,994
Per person	Lb.	1.6	2.9	1.4	4.3	3.4	.6	13.3	.5	1.1	4.9	6.6	19.8
Jan.-Mar.:													
Total	Mil. lb.	305	561	238	852	682	117	2,585	189	201	961	1,351	3,936
Per person	Lb.	1.5	2.8	1.2	4.2	3.4	.6	12.8	.9	.9	4.8	6.7	19.5
Apr.-June:													
Total	Mil. lb.	244	502	231	814	788	121	2,552	194	179	1,006	1,378	3,930
Per person	Lb.	1.2	2.5	1.1	4.0	3.9	.6	12.6	1.0	.9	5.0	6.8	19.4
July-Sept.:													
Total	Mil. lb.	278	512	291	842	683	111	2,562	200	201	985	1,385	3,947
Per person	Lb.	1.4	2.5	1.4	4.2	3.4	.5	12.6	1.0	1.0	4.9	6.8	19.5
Season:													
Total	Mil. lb.	1,148	2,150	1,045	3,368	2,833	472	10,368	691	852	3,926	5,470	15,838
Per person	Lb.	5.7	10.6	5.2	16.7	14.0	2.3	51.3	3.4	4.2	19.4	27.1	78.4
1969-70 5/													
Oct.-Dec.:													
Total	Mil. lb.	306	592	252	943	732	122	2,767	101	172	1,106	1,378	4,1[illegible]
Per person	Lb.	1.5	2.9	1.2	4.6	3.6	.6	13.6	.5	.8	5.4	6.8	20.4
Jan.-Mar.:													
Total	Mil. lb.	295	583	235	923	774	138	2,778	184	150	937	1,271	4,048
Per person	Lb.	1.4	2.9	1.2	4.5	3.8	.7	13.6	.9	.7	4.6	6.2	19.8
Apr.-June:													
Total	Mil. lb.	244	496	251	842	791	144	2,622	193	161	976	1,330	3,951
Per person	Lb.	1.2	2.4	1.2	4.1	3.9	.7	12.8	1.0	.8	4.8	6.5	19.3
July-Sept.:													
Total	Mil. lb.	261	538	188	885	766	127	2,606	187	182	1,025	1,394	4,000
Per person	Lb.	1.3	2.6	.9	4.3	3.7	.6	12.7	.9	.9	5.0	6.8	19.5
Season:													
Total	Mil. lb.	1,105	2,209	927	3,593	3,063	532	10,772	667	644	4,039	5,350	16,122
Per person	Lb.	5.4	10.8	4.5	17.6	15.0	2.6	52.8	3.3	3.2	19.8	26.2	79.0
1970-71 5/													
Oct.-Dec.:													
Total	Mil. lb.	304	607	261	907	822	131	2,856	123	134	1,084	1,342	4,199
Per person	Lb.	1.5	3.0	1.3	4.4	4.0	.6	13.9	.6	.7	5.3	6.5	20.4
Jan.-Mar.:													
Total	Mil. lb.	271	581	244	891	772	124	2,716	195	143	889	1,228	3,944
Per person	Lb.	1.3	2.8	1.2	4.3	3.7	.6	13.2	.9	.7	4.3	6.0	19.1
Apr.-June:													
Total	Mil. lb.												
Per person	Lb.												
July-Sept.:													
Total	Mil. lb.												
Per person	Lb.												
Season:													
Total	Mil. lb.												
Per person	Lb.												

1/ Includes all food fats and oils used other than butter, lard, margarine, shortening and cooking and salad oils.

2/ Fat equivalent of soap used in synthetic rubber is included in "other industrial products". Adjusted for foreign trade and changes in stocks.

3/ Paints, varnishes, floor coverings, oilcloth, printing inks, core oils, synthetic resins, insulation, linings, packings, coated fabrics, caulking and other protective coatings.

4/ Includes use of fats and oils in chemicals, lubricants and greases, animal feeds, fatty acids, tin and terne plate, pharmaceuticals, leather, candles, synthetic organic detergents, toilet articles, and miscellaneous industrial products.

5/ Preliminary.

Table 16.--Fats and oils (including their products) and oilmeals: Production from domestic and imported materials, and factory and warehouse stocks at end of month

Item	Production						Stocks			
	October-April		1970	1971			1970	1971		
	1969-70	1970-71	Apr.	Feb.	Mar.	Apr.	Apr. 30	Feb. 28	Mar. 31	Apr. 30
					Million pounds					
PRIMARY FATS AND OILS										
Food fats and oils										
Butter (creamery)	645.9	674.3	109.1	97.4	110.3	111.5	114.2	133.2	157.9	180.4
Lard (commercial)	1,076.7	1,248.7	161.4	138.6	203.4	171.0	75.2	85.8	80.9	79.9
Beef fats	346.0	336.3	48.6	49.1	52.4	43.4	40.0	37.7	37.0	34.8
Total edible animal fats	2,068.6	2,259.3	319.1	285.1	366.1	325.9	229.4	256.7	275.8	295.1
Corn oil	278.6	276.9	42.1	37.3	43.7	41.4	68.7	37.1	47.9	59.0
Cottonseed oil	1,034.3	969.9	102.8	141.2	134.0	103.3	325.1	224.6	246.9	265.4
Palm oil	---	---	---	---	---	---	23.0	49.5	58.0	68.7
Peanut oil	126.5	164.9	22.6	24.6	28.4	28.4	28.6	27.4	28.9	37.9
Soybean oil	4,615.8	4,932.8	672.3	653.2	695.9	695.7	632.3	787.8	756.0	767.8
Safflower oil	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	47.3	21.3	14.6	13.4
Total edible vegetable oils	6,055.2	6,344.5	839.8	856.3	902.0	868.8	1,125.0	1,147.7	1,152.3	1,212.2
Soap fats and oils										
Tallow, inedible, and greases 1/	2,822.9	3,074.9	407.1	401.7	503.5	435.9	365.8	349.6	380.6	365.8
Fish and marine oil 2/	32.4	40.3	3.1	.5	.5	9.5	74.0	62.7	60.0	65.1
Coconut oil	196.6	D	19.1	D	D	D	122.1	180.9	182.5	169.5
Total soap fats	3,051.9	3,115.2	429.3	402.2	504.0	445.4	561.9	593.2	623.1	600.4
Drying oils										
Castor oil 2/	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	117.4	116.1	113.3	100.7
Linseed oil	173.1	220.9	27.1	32.4	34.9	36.7	133.9	170.5	180.7	193.0
Tall oil	744.2	761.3	118.2	106.9	127.0	108.4	175.2	138.0	164.4	171.6
Tung oil	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	52.8	49.9	49.3	49.6
Total drying oils	917.3	982.2	145.3	139.3	161.9	145.1	479.3	474.5	507.7	514.9
Grand total	12,093.0	12,701.2	1,733.6	1,682.8	1,933.9	1,785.3	2,395.6	2,472.1	2,558.9	2,622.6
From domestic materials	11,896.4	12,701.2	1,714.4	1,682.8	1,933.9	1,785.3				
From imported materials	196.6	D	19.1	D	D	D				
FAT-AND-OIL PRODUCTS										
Cooking and salad oils										
Total	1,929.2	2,003.8	285.4	281.7	292.0	270.2	83.6	76.0	70.7	72.0
Soybean	1,355.6	1,444.5	201.5	201.0	214.1	203.4	64.5	56.0	51.1	54.7
Other	573.7	559.2	83.8	80.7	77.9	66.8	19.1	20.0	19.6	17.3
Baking and frying fats (shortening)										
Total	2,187.4	2,094.2	303.1	309.2	300.0	272.4	140.8	130.3	134.7	134.4
100% vegetable oil	1,525.0	1,391.7	211.6	193.5	199.4	183.5	106.6	97.7	98.9	97.1
100% animal fats or blends of vegetable oil and animal fats	662.4	702.5	91.5	115.7	100.6	89.0	34.2	32.6	35.8	37.3
Margarine										
Total	1,356.6	1,382.8	169.4	189.0	195.9	180.3	59.4	59.4	57.7	56.1
Soft	243.6	277.2	30.4	42.5	39.9	33.7	---	---	---	---
1 pound units	1,207.2	1,233.7	148.9	169.6	170.8	160.3	---	---	---	---
All other	149.4	149.1	20.5	19.4	25.0	20.0	---	---	---	---
Fatty Acids	652.7	650.3	100.3	92.2	96.9	86.9	139.4	147.9	156.9	143.0
Glycerine (Natural and synthetic)	208.3	194.0	29.5	24.3	30.6	24.1	51.0	48.0	50.2	43.1
Meat Meal and Tankage	2,344.3	2,379.2	335.5	314.9	352.4	326.2	---	---	---	---
OILSEED CAKE AND MEAL					Thousand tons					
Soybean (including hull meal)	10,249.3	10,780.5	1,481.1	1,431.6	1,507.4	1,505.4	156.9	189.3	153.2	168.1
Cottonseed	1,479.2	1,387.2	144.2	202.4	192.2	145.3	148.4	125.5	136.4	134.5
Linseed	153.1	198.3	23.5	28.5	30.7	32.7	6.4	15.1	20.1	20.9
Peanut	85.0	111.3	14.8	16.2	18.0	18.8	5.8	4.7	7.2	10.1
Copra	57.5	D	5.5	D	D	D	D	D	D	D
Other	63.9	1.8	10.4	1.8	D	D	26.2	13.6	10.7	7.6
Total oilmeals	12,088.0	12,479.1	1,679.5	1,680.5	1,748.3	1,702.2	343.7	348.2	327.6	341.2

1/ Beginning October 1970 computed production.

2/ Stocks include GSA stockpile.

N.A. Not available. D - Census disclosure.

Table 17.--Imports and exports of fats, oils, oil-bearing materials, fat-and-oil products (in terms of oil) and oilmeals

Item	Imports for consumption					Exports 1/				
	Oct.-Apr.		1971			Oct.-Apr.		1971		
	1969-70	1970-71	Feb.	Mar.	Apr.	1969-70	1970-71	Feb.	Mar.	Apr.
					Million pounds					
Food fats and oils										
Butter	1.9	1.9	.1	.1	.1	1.7	.2	2/	2/	2/
Lard	---	---	---	---	---	197.6	234.5	40.5	44.4	39.3
Beef fats	.3	.1	2/	2/	2/	10.3	6.9	.4	1.0	.3
Total, edible animal fats	2.2	2.0	.1	.1	.1	209.6	241.6	40.9	45.4	39.6
Corn oil	.5	2/	---	---	---	5.0	9.0	1.4	1.5	1.4
Cottonseed oil	.1	---	---	---	---	334.3	207.8	37.4	40.3	18.2
Cottonseed (17 percent)	---	---	---	---	---	4.0	7.2	2.5	.6	2.5
Olive oil, edible	36.2	38.6	5.1	7.4	5.4	---	---	---	---	---
Palm oil	73.3	145.8	24.6	24.1	24.9	---	---	---	---	---
Peanut oil	2/	2/	---	2/	2/	24.8	19.6	2.4	5.7	2.8
Peanuts, shelled (43.5 percent)	---	---	---	---	---	8.9	21.4	5.9	5.1	3.9
Soybean oil	---	---	---	---	---	655.3	956.8	118.2	164.5	179.5
Soybeans (18.3 percent)	2/	2/	2/	---	2/	3,154.3	2,995.1	363.5	386.6	361.0
Safflower seed (36 percent)	---	---	---	---	---	22.7	23.1	.5	.1	---
Other vegetable oils	12.8	14.7	2.0	2.9	3.6	5.0	5.8	.3	1.4	1.0
Total, edible vegetable oils	122.9	199.1	31.7	34.4	33.9	4,214.3	4,245.8	532.1	605.8	570.3
Soap fats and oils										
Tallow, inedible	4.5	5.0	.7	.4	.6	1,029.4	1,449.0	260.5	219.5	222.2
Greases	2/	2/	2/	2/	---	111.2	125.5	14.3	19.9	13.9
Fish and fish liver oils non-medicinal	.2	.2	.1	.1	---	98.9	70.3	5.1	2.7	6.4
Marine mammal oils	27.2	26.7	4.3	.1	4.8	---	---	---	---	---
Olive oil, inedible	.2	.1	.1	2/	2/	---	---	---	---	---
Total, slow-lathering oils	32.1	32.0	5.2	.6	5.4	1,239.5	1,644.8	279.9	242.1	242.5
Babassu oil	5.4	---	---	---	---	---	---	---	---	---
Coconut oil	312.2	369.0	41.7	52.9	54.9	3.0	7.0	.6	1.1	1.8
Copra (64 percent)	188.2	181.0	---	29.3	44.3	---	---	---	---	---
Palm kernel oil	50.3	64.8	10.4	6.7	13.4	---	---	---	---	---
Total, lauric-acid oils	556.1	614.8	52.1	88.9	112.6	3.0	7.0	.6	1.1	1.8
Drying oils										
Flaxseed (36.1 percent)	2/	2/	---	---	---	90.5	37.2	.1	2/	3.5
Linseed oil	2/	2/	---	---	2/	26.5	34.3	.2	5.0	5.2
Oiticica oil	3.4	2.0	---	.7	.7	---	---	---	---	---
Tall oil	---	---	---	---	---	95.4	87.5	9.6	18.6	7.1
Tung oil	14.1	15.1	2.6	1.0	3.4	1.4	1.1	.2	.2	.2
Total	17.5	17.1	2.6	1.7	4.1	213.8	160.1	10.1	23.8	16.0
Other industrial oils and fats										
Castor oil	87.0	55.9	6.6	8.9	9.2	---	---	---	---	---
Fish-liver oils, medicinal	5.2	8.4	2.7	.9	.8	---	---	---	---	---
Rapeseed oil	3.8	7.5	1.2	1.3	1.8	---	---	---	---	---
Wool grease	4.1	5.9	.8	.8	1.0	---	---	---	---	---
Other vegetable oils and fats, inedible	7.2	6.0	.7	.7	1.0	46.6	51.7	4.4	7.1	7.2
Total	107.3	83.7	12.0	12.6	13.8	46.6	51.7	4.4	7.1	7.2
Products										
Margarine (fat content)	---	---	---	---	---	1.4	1.7	.3	.3	.2
Shortening	---	---	---	---	---	16.4	13.6	1.3	2.4	2.1
Salad products (fat content)	---	---	---	---	---	4.9	6.1	.7	1.0	1.5
Soap (fat content)	1.6	1.3	.2	.1	.2	6.6	5.8	.8	.7	1.1
Fatty acids	5.3	4.4	.7	.7	.8	66.9	73.9	9.2	20.8	6.9
Total	6.9	5.7	.9	.8	1.0	96.2	101.1	12.3	25.2	11.8
Grand total	845.0	954.3	104.6	139.0	170.7	6,023.1	6,452.1	880.2	950.5	889.4
Glycerine	.3	---	---	---	---	44.4	38.3	7.0	4.9	8.7
Oilseed Cake and Meal:					Thousand tons					
Soybean	---	---	---	---	---	2,427.3	2,614.1	310.2	413.0	383.8
Cottonseed	1.1	---	---	---	---	5.3	26.2	11.1	5.6	6.4
Linseed	1.3	.9	.1	.1	.2	47.2	36.7	---	.1	.5
Copra	---	---	---	---	---	---	---	---	---	---
Corn	---	---	---	---	---	2.5	1.2	.1	.1	.1
Other	3.6	1.3	---	---	.6	23.8	57.5	11.1	7.1	3.7
Total oilmeals	6.0	2.2	.1	.1	.8	2,506.1	2,735.7	332.5	425.9	394.5

1/ Includes re-exports and foreign donations but not shipments to U.S. Territories. 2/ Less than 50,000 pounds.

Table 18 .--Index numbers of wholesale prices of fats and oils 1/

Item	1967=100				
	April		1971		
	1969	1970	February	March	April
All fats and oils	99	122	122	125	121
All fats and oils, except butter	98	132	132	138	132
Grouped by origin:					
Animal fats	107	123	120	125	122
Vegetable oils, domestic	90	125	124	126	117
Vegetable oils, foreign	94	130	119	111	109
Grouped by use:					
Butter	101	104	104	104	101
Butter, seasonally adjusted	105	109	102	102	106
Lard	110	150	128	150	144
Lard, refined	105	129	110	123	120
Food fats other than butter	95	134	128	136	128
Food fats other than butter and lard	91	129	128	130	122
All edible fats and oils	99	118	116	120	114
Soap fats	105	134	145	147	146
Drying oils	88	105	96	96	90
Other industrial	100	130	125	126	122
All industrial	102	130	138	139	138
Edible vegetable oils, grouped by degree of processing:					
Crude	90	128	128	129	120
Refined	97	117	148	152	125
End products	101	111	119	119	119
Margarine	100	112	119	119	119
Shortening, 3 lb. tin	98	109	120	120	120
Shortening, 400 lb. drum	107	110	118	118	118

1/ The year 1967 has been established as the new standard reference base period for general purpose index numbers prepared by Federal agencies. Index numbers based on 1967=100 were converted from the indexes based on 1957-59=100 previously published in this report.

Table 19 --Prices received by farmers and prices at terminal markets for specified oil-bearing materials and oilmeals

Item	Unit	May		1971		
		1969	1970	March	April	May
				-- Dollars --		
OILSEEDS						
Copra, Philippines, c.i.f. Pacific Coast	Short ton	165.40	---	---	---	---
Cottonseed, United States average	Short ton	---	---	58.20	---	---
Flaxseed, No. 1, Minneapolis	Bushel	3.15	2.97	2.63	2.71	2.72
Flaxseed, United States average	Bushel	2.79	2.50	2.34	2.38	2.37
Peanuts, United States average (farmers' stock)	100 lb.	---	---	---	---	---
Peanuts, Virginias' No. 1, shelled, Va.-N.C. 1/	100 lb.	22.38	21.62	21.75	21.62	21.88
Peanuts, Runners No. 1, shelled, Southeast 1/	100 lb.	22.00	22.68	21.25	21.12	21.12
Peanuts, Spanish No. 1, shelled, Southeast 1/	100 lb.	22.00	22.25	21.50	21.50	21.50
Peanuts, Spanish No. 1, shelled, Southwest 1/	100 lb.	22.00	22.88	21.62	21.50	21.75
Soybeans, No. 1, Yellow, Chicago	Bushel	2.72	2.70	3.04	2.91	3.03
Soybeans, No. 1, Yellow, Illinois country shipping points	Bushel	2.64	2.65	3.00	2.91	2.99
Soybeans, United States average	Bushel	2.56	2.52	2.91	2.80	2.85
OILMEALS (bulk)						
Copra meal, 20 percent protein, Los Angeles	Short ton	73.20	---	---	---	---
Cottonseed meal, 41 percent protein, Memphis	Short ton	59.10	65.20	66.80	68.25	68.80
Cottonseed meal, 41 percent protein, Chicago	Short ton	68.70	74.75	78.40	80.40	81.30
Cottonseed meal, 41 percent protein, Atlanta	Short ton	62.80	70.75	72.00	74.25	75.50
Cottonseed meal, 41 percent protein, Ft. Worth	Short ton	60.80	76.20	80.80	79.50	78.75
Fish meal, 60 percent protein, bagged, New York	Short ton	161.00	199.40	179.00	174.50	170.00
Fish meal, 60 percent protein, bulk, Los Angeles	Short ton	132.00	174.00	150.00	150.00	147.40
Linseed meal, 34 percent protein, Minneapolis	Short ton	70.40	65.75	59.40	57.00	57.75
Linseed meal, 34 percent protein, New York	Short ton	89.60	87.80	87.00	84.50	84.50
Peanut meal, 50 percent protein, f.o.b. Southeastern mills	Short ton	76.10	71.75	74.20	74.25	75.75
Safflower meal, 20 percent solvent, San Francisco	Short ton	37.00	40.00	45.00	45.00	42.00
Soybean meal, 44 percent protein, Chicago	Short ton	80.60	76.20	82.40	80.25	84.25
Soybean meal, 44 percent protein, Decatur	Short ton	76.10	71.20	77.00	74.25	78.25
Soybean meal, 44 percent protein, Atlanta	Short ton	84.80	77.60	86.20	82.50	85.00
Soybean meal, 44 percent protein, Memphis	Short ton	77.40	71.60	79.60	75.60	78.30
Soybean meal, 50 percent protein, Decatur 2/	Short ton	84.90	78.90	82.00	80.50	84.75
Soybean meal, 50 percent protein, Memphis 2/	Short ton	87.00	83.90	87.40	84.10	88.75
Soybean meal, 50 percent protein, Atlanta 2/	Short ton	92.90	88.70	93.10	90.00	95.80

1/ This price applies to peanuts for edible uses. 2/ 49 to 50 percent protein.

Compiled from Oil, Paint, and Drug Reporter, Wall Street Journal, Chicago edition, reports of the Statistical Reporting Services, and the Consumer Marketing Service.

Table 20.--Wholesale and retail prices per pound for fats and oils

Item	May 1969	May 1970	1971 March	1971 April	1971 May
	-- Cents --				
Wholesale Prices					
Butter, creamery, Grade A, (92-score) bulk, New York	68.6	70.8	70.8	68.8	68.8
Butter, creamery, Grade A, (92-score) bulk, Chicago	67.6	69.8	69.8	67.8	67.8
Butter, creamery, Grade A, (92-score) prints, San Francisco	81.5	85.3	85.8	84.0	84.0
Castor oil, dehydrated, tanks, New York	28.0	28.0	27.5	27.2	29.0
Castor oil, No. 1, Brazilian, tanks, imported, New York	14.7	14.3	17.5	17.0	16.5
Coconut oil, crude, tank cars, Pacific Coast, 1/	12.6	16.4	13.8	13.2	13.1
Coconut oil, crude, tanks, f.o.b. New York	12.4	17.4	14.8	14.2	14.1
Coconut oil, refined, tanks, l.c.l., New York	15.2	18.8	16.6	15.5	15.4
Cod oil, spot, drums, New York	8.0	8.2	---	---	---
Codliver oil, medicinal, U.S.P., barrels, New York	19.5	20.8	21.5	22.8	22.8
Corn oil, crude, tank cars, f.o.b. Midwest mills	12.7	15.3	21.0	17.0	18.8
Corn oil, crude, tanks, New York	12.6	15.0	19.5	17.6	19.1
Corn oil, refined, tanks, New York	15.9	18.9	22.5	20.7	22.1
Cottonseed oil, crude, tank cars, f.o.b., S.E. mills	11.5	14.3	16.1	15.6	15.3
Cottonseed oil, crude, tank cars, f.o.b., Valley	11.4	14.3	15.9	15.2	15.0
Cottonseed oil, crude, tank cars, f.o.b., Texas	11.2	14.1	15.8	15.0	14.9
Cottonseed oil, refined, tanks, New York	14.6	18.3	20.1	19.4	19.1
Degras, Lanolin technical, drums, New York	22.0	22.0	41.0	41.0	41.0
Glycerine, synthetic, refined, 99.5%, tanks, delivered, New York	24.2	22.0	22.0	22.8	23.0
Glycerine, natural, refined, USP. 99%, tanks, delivered, New York	24.1	20.6	20.6	21.4	21.6
Grease, A white, tank cars, delivered Chicago	6.3	8.4	8.4	8.5	6.9
Grease, B white, delivered, Chicago	5.8	8.1	7.8	7.6	7.2
Grease, yellow, delivered, Chicago	5.6	7.3	7.3	7.3	7.9
Grease, white, choice, tanks, New York	5.0	8.6	8.7	8.3	7.9
Grease oil, extra No. 1, drums, Chicago	13.4	13.4	13.4	13.4	14.3
Lard, loose, tank cars, Chicago	8.4	11.6	11.8	11.3	10.8
Lard, prime steam, tierces, Chicago	8.5	11.1	11.6	10.6	10.5
Lard, refined, one and two pound prints, Chicago	14.0	17.0	16.8	16.3	15.8
Lard, refined, carlots, 50-lb. tins, Chicago	11.0	13.6	N.A.	N.A.	N.A.
Linseed oil, raw, tank cars, Minneapolis	11.9	12.2	9.0	8.8	8.8
Linseed oil, raw, tanks, New York	13.0	12.2	10.4	10.2	10.2
Margarine, colored, delivered, Eastern U.S.	25.7	29.0	30.5	30.5	30.5
Margarine, yellow, quarters, f.o.b., Chicago	16.0	20.8	20.8	20.8	20.8
Margarine, white, domestic vegetable, Chicago	14.5	19.5	19.5	19.5	19.5
Menhaden oil, crude, tanks, f.o.b., Baltimore	4.5	N.A.	10.3	10.3	10.3
Menhaden oil, light pressed, tanks, New York	9.5	10.5	10.5	10.5	10.5
Oiticica oil, drums, f.o.b., New York	13.1	18.5	18.0	18.0	18.0
Oiticica oil, tanks, New York	11.1	16.5	16.0	16.0	16.0
Olive oil, imported, edible, drums, New York	38.7	40.7	39.3	39.3	39.3
Palm oil, clarified, drums, f.o.b., New York	12.5	17.2	16.0	16.0	15.0
Palm oil, Congo, tank cars, f.o.b., New York	11.2	14.0	13.5	13.5	12.5
Peanut oil, crude, tank cars, f.o.b. S.E. mills	13.6	16.1	17.1	16.6	17.4
Peanut oil, refined, tanks, New York	16.2	18.9	20.4	19.8	20.6
Rapeseed oil, refined (denatured), tanks, New York	13.8	17.0	17.5	17.5	17.5
Safflower oil, tanks, New York	15.6	16.5	18.4	18.4	18.4
Safflower oil, edible, drums, New York	22.8	27.0	27.0	27.0	27.0
Sesame oil, refined, drums, New York	35.0	39.0	39.0	39.0	39.0
Shortening, all vegetable, hydrogenated, 440-lb. drums, New York	22.2	22.2	24.5	24.5	24.5
Shortening, all vegetable, hydrogenated, 3 lb. tins, delivered, Eastern U.S.	25.8	29.1	31.6	31.7	30.1
Soybean oil, crude tank cars, f.o.b., Decatur	8.4	11.3	12.2	11.2	11.4
Soybean oil, refined, tanks, New York	10.4	13.3	14.3	13.2	13.0
Soybean oil, clarified, tanks, New York	10.3	13.3	14.4	13.2	13.6
Sperm oil, natural 45°, drums, New York	14.5	20.2	28.0	28.0	28.0
Sperm oil, bleached, winter 45°, drums, New York	17.5	21.2	29.0	29.0	29.0
Tall oil, crude, tanks, works	3.4	3.5	3.8	3.8	3.8
Tall oil, refined, tanks, works	7.5	8.5	8.5	8.5	8.5
Tallow, edible, loose, Chicago	8.5	10.8	11.8	11.0	11.0
Tallow, inedible, packers' prime, c.a.f. delivered, Chicago	6.0	8.3	8.0	7.8	7.6
Tallow, inedible, bleachable fancy, delivered, Chicago	6.4	8.6	8.6	8.3	8.2
Tallow, No. 1, inedible, delivered, Chicago	5.6	7.9	7.4	7.2	6.9
Tallow, special, inedible, tanks, delivered, New York	5.0	7.8	8.1	7.8	7.5
Tung oil, imported, drums, f.o.b., New York	14.8	26.0	26.0	26.0	26.0
Tung oil, imported, tanks, New York	12.5	23.6	15.3	13.9	13.2
Tung oil, domestic, tanks, f.o.b. mills	2/24.0	2/24.0	2/24.0	2/24.0	2/24.0
Retail prices 3/					
Butter	84.4	86.6	87.7	87.8	87.5
Margarine	27.8	29.9	32.1	32.5	32.7
Shortening	27.9	29.4	31.7	32.0	N.A.
Salad Dressing (Italian)	76.0	75.8	80.2	81.2	81.8
Peanut Butter	60.8	63.1	65.7	65.8	N.A.
Cooking and Salad oils	34.6	37.7	41.2	41.7	41.8

1/ Includes 1 cent import duty.
2/ Nominal.
3/ Leading cities.
N.A. Not available.

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